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NEW AND LITTLE KNOWN SOUTH INDIAN ACRIDIDAE (ORTHOPT.)

By G. M. Henry, F.R.E.S.

(*Assistant in Systematic Entomology, Colombo Museum.*)

With 18 Text-figures.

Manuscript received 20th March, 1940.

(Read 5th June, 1940.)

The research embodied in this paper was carried out, during a period of furlough, at the British Museum (Natural History) in 1939–40. My grateful thanks are due to the Ceylon Government for granting me an extension of leave to enable me to complete the work; to the authorities of the British Museum for giving me facilities in working at the Museum; and in particular, to Dr. B. P. Uvarov, who has unstintingly placed at my disposal his vast knowledge of the Acrididae and helped in every possible way.

The insects here described are a small part of the collections made by the three British Museum–Colombo Museum Expeditions to South India which took place respectively in March–April 1936, April–May 1937, and September–October 1938, each lasting a little over a month. Large collections of Orthoptera (as well as other insects of most Orders) were made and many new species remain to be described. It is satisfactory to be able to record that material of some of I. Bolivar's less known species having come to hand, their true relationships can now be more accurately determined.

In order to facilitate further work on the Orthopterous fauna of South India, it is desirable that a brief account of the localities where collecting took place on the three expeditions be given here.

In Madras.

(1) *Dohnavur*, Tinnevelly District; 350 feet; a Mission Station in the Nanguneri Taluk, situated on the plains about three miles from the foot-hills of the Southern Cardamom Range. The country is flat, rising abruptly at the foot-hills, and is cultivated on the plains, covered with scrub-jungle and coarse grass on the hills. Collecting took place mainly on waste-land on the plains and among the foot-hills. This station was visited on the first and third expeditions.

(2) *Naraikādu*, 2500 feet; the small sanatorium belonging to the Dohnavur Mission is situated in virgin forest in the mountains about ten miles west of Dohnavur. The terrain is steep with numerous ravines down which rapid streams flow. The steeper slopes of the mountains are clothed with coarse grasses. Naraikādu was visited on the first and third expeditions.

(3) *Kaniyini Ridge*, *ca.* 5000 feet; the crest of the range which divides the Tinnevelly District of Madras Presidency from Travancore State, above Naraikādu. On the highest parts forest gave place to open spaces of coarse tussocky grass, with outcrops of bare rock. A bleak, windy and misty spot.

(4) *Mānshola*, a coffee and tea garden set in forest and grass-land among the mountains two or three miles northwards of Naraikādu and about 2000 feet higher. It was visited on one morning only, during the third expedition.

(5) *Cape Comorin*; the southernmost point of India. The country is mainly scrub-land with vegetation of a xerophytic type. This locality was visited on one day only during the third expedition.

(6) *Alagar Kovil* (anglice *Alagarcoil*); a scattered village 13 miles N.N.E. of Madura, lying at the foot of the Alagarmalai Hills, a detached spur of the Western Ghauts. These hills rise to approximately 1000 feet and are covered with low scrub jungle. The country at the base of the hills consists of flat plain sparsely cultivated and clothed with Palmyra palms. Collecting took place in scrub- and waste-land on the plains and among coarse grasses, thorny scrub and forest on the hills. It was visited for several days during the first expedition.

(7) *Kodaikanal*, 7000 feet; the well-known sanatorium in the Palni Hills is situated on the edge of a rolling table-land, mostly clothed with short grasses but with natural forest in many of the ravines.

(8) *Shembaganur, ca.* 6000 feet, a village on the road to Kodaikanal. Collecting took place in forest and grass-land.

(9) *Coimbatore*, 1300 feet, is a large town on the plains within easy reach of several distinct ranges of mountains. It proved to be an ideal base. At Coimbatore itself collecting was confined to open waste-land and dry pastures etc.

(10) *Siruvani*, 1750 feet; a waterworks reservoir about 20 miles S.W. of Coimbatore in the Bolampatti Valley, at the foot of the Coimbatore Hills. Collecting was done in forest undergrowth, mainly along the steep path leading to Muthikolam, on two or three days only during the second and third expeditions.

(11) *Muthikolam*, 3000 feet, a Forest Depot about four miles W. of Siruvani. The country consists of an undulating plateau between high mountains, and is clothed with forest interspersed with coarse grass-land.

(12) *Madukarai*. A station on the railway from Coimbatore to Palghat, in the eastern mouth of the Palghat Gap. Collecting was done among stony foot-hills with scrub vegetation and euphorbias.

(13) *Walayar Forest* in the Palghat Gap. Dry deciduous forest much mixed with thorny bamboo. One afternoon was spent here in April 1937.

(14) *Chenat Nair Forest Reserve*, Palghat. Collecting was done in dry deciduous forest up the slopes of mountains ascending to the Sappal Ridge where there was a small area of grass-land and rain-forest.

(15) *Burliyar*. A Government Agricultural Station on the Ghaut road to Ootacamund, Nilgiri Hills, ten miles from Mettupalayam. Evergreen forest mixed with clumps of thorny bamboo comprised the type of vegetation encountered.

(16) *Coonoor, ca.* 6000 feet, in the Nilgiri Hills. Collecting took place mostly along road-sides in forest and shrubbery.

(17) *Sethumadai*. A village and Forest Depot on the plain at the foot of a northern spur of the Anaimallai Hills. Collecting was done in the compound of the Forest Bungalow and in dry deciduous forest on the lower slopes of the hills.

(18) *Top Slip Camp*. A Forest Camp in the Mount Stuart area of the Anaimallai Hills about 13 miles S.W. of Pollachi. The vegetation met with consisted of tall rain-forest interspersed with short grass.

(19) *Dhimbam* and (20) *Hasanur, ca.* 3600 feet, four miles apart, near the southern escarpment of the Biligirirangan Hills, N.W. of Satyamangalam. They are on an undulating plateau clothed with thin, deciduous forest of small trees with undergrowth of grasses of various kinds.

In Travancore.

(21) *Pirmed,* 3400 feet; a small sanatorium and tea-planting centre. The hills are mostly clothed with short grass with patches of coarse lemon grass here and there, and with " sholas " of tall rain-forest in the ravines; the undergrowth in the forest consists largely of a small, broad-leaved bamboo, *Ochlandra* sp.

(22) *Thekkadi* and *Periyar Dam,* 2700 feet. The country surrounding the Periyar Lake consists of a hilly plateau clothed with forest of the dry deciduous type. There is a good deal of coarse grass-land with thin shade of teak etc., and here and there patches of tall rain-forest have survived the destruction wrought by man's fellings and grass fires.

(23) *Tenmalai, ca.* 500 feet; a Forest Depot among the hills at the western end of the Shencottah gap through which passes the railway from Tuticorin to Trivandrum. The country is densely forested, with tall rain-forest, and the humidity is high.

List of genera and species dealt with in this paper :—

Eumastacinae : *Prionacantha picta* gen. et sp. n.

Acridinae : *Madurea cephalotes* I. Bolivar, *Dhimbama dawsoni* gen. et sp. n.; *Phonogaster cariniventris* gen. et sp. n., *Psectrocnemus longiceps* (I. Bolivar) gen. n.

Catantopinae : *Tinnevellia andrewi* gen. et sp. n., *Calamippa prasina* (I. Bolivar) gen. n., *Bambusacris travancora* sp. n., *Siruvania dimorpha* gen. et sp. n., *Naraikadua carmichaelae* gen. et sp. n., *Palniacris maculatus* gen. et sp. n., *Palniacris rugulosus* (I. Bolivar), *Coniocara rubropicta* gen. et sp. n., *Mopla guttata* gen. et sp. n., *Mopla rubra* sp. n.

In accordance with the agreement made between the British Museum and the Colombo Museum when the three expeditions were arranged, half the material of each species, including all types of new species, is deposited in the British Museum (Natural History), the remainder in the Colombo Museum.

Eumastacinae.

Prionacantha gen. n. (figs. 1 and 2).

Of slender build, resembling *Mastacides* I. Bolivar in general appearance; brachypterous; greenish-yellow, banded and striped with black and white; of medium size among Eumastacinae.

Head elongate, carried obliquely, widening ventrally in ♀. Occiput with a median carina. Fastigium of vertex projecting obliquely forwards; with a shallow transverse concavity at its base, disk convex, sides carinate, the carinae projecting to form a bifid apex; in profile, the fastigium is triangular with lateral disk transversely rugose. Frontal ridge formed much as in *Eupatrides* Brunner but narrower; with its carinae anteriorly enclosing a deep furrow, converging to level of third antennal segment then widening between bases of antennae as shown in fig. 1, b. Lateral facial carinae diverging from outer base of antennae to a point below eyes, thence nearly parallel to corners of clypeus. Face and genae nearly smooth.

Eyes large, elliptical, depressed in ♀, more prominent in ♂, about as long as the sub-

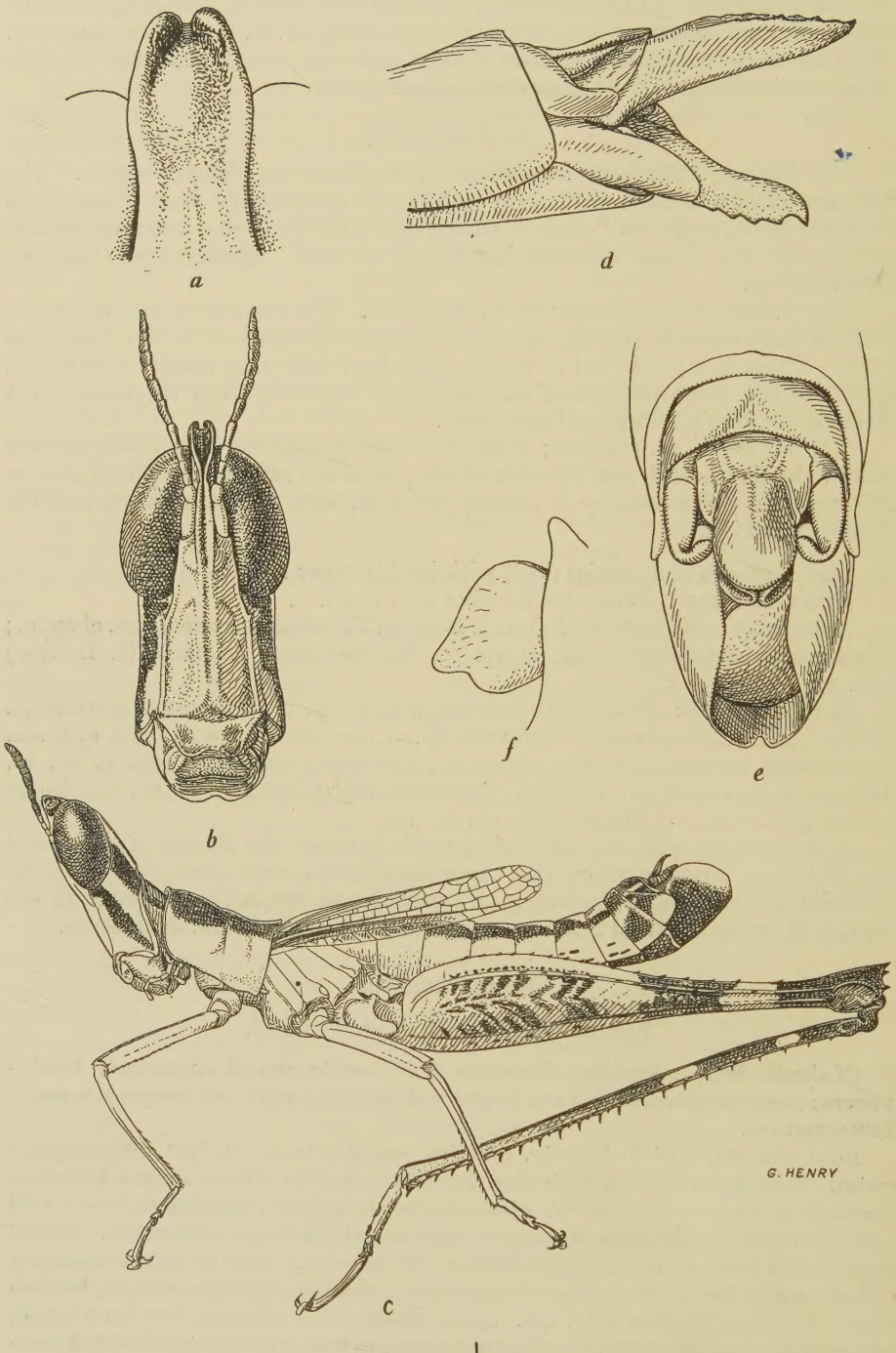

FIG. 1.—*Prionacantha picta* gen. et sp. n. (a) ♂, fastigium of vertex, dorsal; (b) ♂, face; (c) ♂, whole insect, lateral; (d) ♀, genitalia; (e) ♂, genitalia, dorsal; (f) ♂, sub-anal appendage and right margin of subgenital lamina, dorsal.

ocular part of genae. Median ocellus obsolescent; lateral ocelli on sides of frontal ridge, more or less concealed by basal antennal segments, and poorly developed. Antenna short, carried erect, of about 13 segments; flagellum cylindrical at base, widening and compressed towards the tip.

Pronotum comparatively long, transversely rounded, truncate in front, shallowly rounded behind, with a median carina but no lateral carinae; with transverse sulci feeble, expressed only on the side; dorsal profile somewhat concave; lateral lobes much longer than high, of the shape shown in fig. 1, c. Dorsum of pronotum finely rugulose.

Tegmina much shorter than abdomen, broadest in basal half, rounded at tip, with the precostal and anal areas somewhat expanded and with large areoles; membrane colourless hyaline; wings nearly as long as tegmina, cycloidal, with colourless hyaline membrane.

Mesosternal lobes widely separated, metasternal lobes contiguous, in both sexes. The posterior lobe of the peritreme of prothoracic spiracle is well developed, projecting as a finger-shaped process beyond the hind margin of lateral lobe of pronotum, just above the hinder angle.

Fore and mid femora with two dorsal carinae, each terminating in a small distal tooth; inner and outer ventral carinae almost equally developed, the latter without a sub-terminal notch (fig. 2, a). Fore and mid tibiae with numerous spines (9 to 12) on distal half of each ventral carina. Hind femur swollen on the inner side, its three dorsal carinae armed with spines; the median dorsal carina produced distally into a spine, beneath which there is a pointed tooth; margins of hind knee and genicular lobes spinose (fig. 2, b). Hind tibia with numerous spines, of evenly graded length, on each dorsal carina, from base to apex, including an outer apical spine. The dorsal and ventral outer spurs not greatly diverse in size. Hind metatarsus with 2–4 outer dorsal spines and one apical inner spine arranged as in fig. 2, c.

All the tibial spines and spurs, the metatarsal spines and the tarsal claws are finely and regularly serrated as shown in figs. 2, c and 2, d. (This tendency to serration of spines etc. is very pronounced, being discernible even on the fore and mid tibial spines.) [1]

As in other EUMASTACINAE the hind tarsus is curiously rotated, and the arolia are asymmetrical, tending to be distorted towards the outer side.

Abdomen medially carinate dorsally. The genital characters are shown in fig. 1 d, e, f.

In Burr's (1903, *Genera Insectorum*, EUMASTACINAE **15** : 2) and C. Bolivar y Pieltain's (1930, *Trab. Mus. Cienc. nat. Madr.* (*Zool.*) **46** : xxxi) keys to the EUMASTACINAE this genus falls near the ERUCIINAE; it differs in the produced fastigium of vertex. From *Erucius* it differs also in the much smaller lateral ocelli, longer pronotum, brachyptery, hind tibial spine characters and genitalia.

Genotype : *Prionacantha picta* sp. n.

Prionacantha picta sp. n. (figs. 1–2).

♂. Shape of head and fastigium as shown in fig. 1, a, b, and c. Antenna about as long as fore femur. Pronotum very finely rugulose, the rugae coarsest, and tending to run transversely, on the metazona. Pleura finely and obliquely rugulose. Tegmina extending little beyond the middle of abdomen, widest at about the proximal third, gradually tapering distally, rounded at tip. Hind tibia with 25–27 outer, 21–22 inner spines, the spines of the

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[1] Serrated spines, spurs and claws are noted in : *Ebneridia* and *Erianthus*; serrated spurs and claws in *Erucius*; serrated claws only are found in *Burrinia*, *Phyllochoreia* and *Mastacides*; in *Eupatrides* and *Gomphomastax* neither spines nor claws are serrated. Other genera than those enumerated have not been examined in this connexion, but it appears to offer considerable taxonomic possibilities and it is strange that writers on the EUMASTACINAE appear to have ignored this feature.

outer row being shorter and more oblique than those of the inner. Hind metatarsus with 2–4 outer spines and 1 (apical) inner.

♀. Width of head across eyes slightly less than width at lower part of genae. Frontal ridge more abruptly raised at level of lateral ocelli than in ♂. Antenna considerably shorter than fore femur. In other respects, including the development of tegmina and wings, the ♀ resembles the ♂.

Genitalia : ♂. Ninth tergite rounded lobate ventrally. Tenth tergite broadly emarginate above the supra-anal plate. Supra-anal plate with the basal portion deflexed, the apical portion, which is elliptical, angularly elevated. Cerci cylindrical, tapering, sharply bent

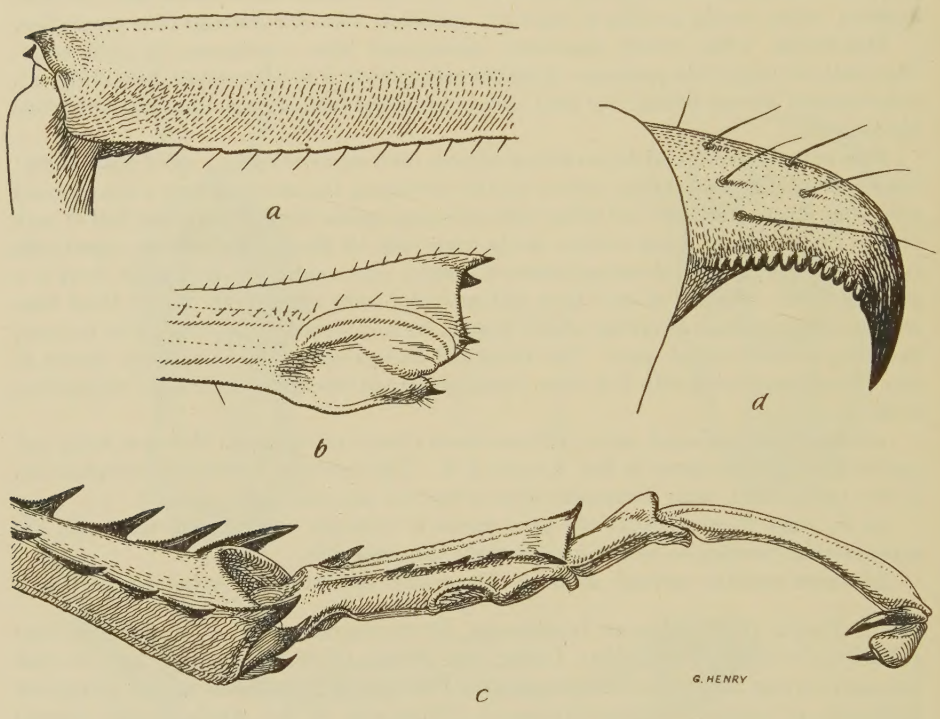

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Fig. 2.—*Prionacantha picta* gen. et sp. n. (a) ♂, left fore femur, posterior side; (b) ♀, left hind femoral knee; (c) ♂, left hind tarsus and apex of hind tibia, showing serrated spines and spurs; (d) ♀, left outer hind claw, proximal aspect, showing serration.

inwards near the tip which is somewhat compressed, rounded. Subgenital lamina forming broad rounded lobes, deeply cleft, of the shape shown in fig. 1, c and e; between these lobes there are various paired appendages of unknown homologies, shown in fig. 1, e and f.

♀. Anal tergite deeply fissured in the middle. Supra-anal plate elliptical, medially sulcate basally. Cerci conical, somewhat compressed, their tips falling short of the tip of supra-anal plate by about their own length. Ovipositor as in fig. 1, d. Subgenital lamina acute, its sides feebly sinuated.

Coloration : ♂. Greenish-yellow; sides and ventral surface of fastigium black; a median, dorsal, forwardly-tapering, band on head and two broad fasciae on sides of head, black; the dorsum of fastigium and spaces between the black bands white. Antenna with

peduncle self-coloured, flagellum black shading to white ventrally on proximal segments. Clypeus with lateral brown spots, labrum with black margins, labium, except palps (whitish), black. Pronotum with dorsal field black; a median line of varying width dirty white; lateral lobes self-coloured greenish-yellow. Tegmen colourless hyaline with vein *C* and its cross-veins white; *Sc*, *R* and 1*A* white more or less shaded with black; remaining veins and cross-veins black or grey. Wings somewhat smoky hyaline with black veins. Abdomen with a black dorsal fascia, each tergite with a median line, expanding distally into a triangle, whitish; sides of tergites with two lines of dark-brown spots, which on the 8th and 9th become large blotches; 10th nearly all shining black, also the distal half of supra-anal plate; cerci black; subgenital lamina black, shading to whitish along its margins. Ventrites mottled dark brown with whitish margins. Fore and mid limbs greenish-yellow with narrow, broken black lines along the carinae. Hind femur with basal half greenish-yellow with broken bands and spots of dark brown as shown in fig. 1, c; distal half mottled dark brown, broken in the middle by a whitish annulus; hind tibia dark brown, paling to whitish distally and with two whitish spots in the positions shown in the figure; the spines and tips of spurs black; hind tarsus whitish, with black spines.

♀. Similar to ♂ but much duller, the black markings of the ♂ being represented by brown, and the white bands on head, pronotum and abdomen absent; the dorsum of pronotum is brown with black lateral borders, and the black abdominal fascia is obsolete except on the first two tergites and sides of the 8th.

Measurements in mm.	Type ♂	Another ♂	♀	♀
Length of body	18·0	17·4	29·0	30·0
Length of antenna	3·6	3·6	3·5	3·4
Width of head across eyes	2·55	2·5	2·8	2·8
Length of pronotum	3·0	2·8	3·9	3·6
Length of tegmen	7·1	7·25	8·3	8·0
Length of fore femur	3·9	3·5	4·0	4·1
Length of hind femur	13·1	12·4	15·3	15·0

Material examined. Type ♂, 2 other ♂♂, and 3 ♀♀, collected at Tenmalai, 500–800 feet, Travancore, 12–15.v.1937 and 11–17.x.1938. Further specimens are in the Colombo Museum but are unavailable for examination at present.

Acridinae.

Madurea I. Bolivar 1902 (fig. 3).

Bolivar, 1902, *Ann. Soc. ent. France* **70** : 596.
Madurea cephalotes I. Bolivar, 1902, *Ann. Soc. ent. France* **70** : 597, pl. 9, f. 32.
Bolivar, I., 1914, Los Truxalinos del Antiguo Mundo, *Trab. Mus. Cien. Nat.* (*Zool.*) **20** : 73.

The capture of a good series of specimens of *Madurea cephalotes* I. Bolivar, the genotype of this hitherto mysterious genus, at Dohnavur, Tinnevelly District, 350 feet, in March 1936, enables me to offer the accompanying illustrations and to indicate the true affinities of the genus *Madurea*. It proves to belong to the group Chorthippi (not Phlaeobae as placed by Bolivar (1914)), and to be near the African genus *Paragymnobothrus* Karny, 1910 (= *Homalohippus* Uvarov, 1929), with the genotype of which, *P. rectus* Karny, I have compared it; it has no close analogy with *Gymnobothrus* I. Bolivar in spite of Bolivar's statement to the contrary (*loc. cit.* : 597); such resemblances as exist are purely superficial and the structure of the ♂ tegmen, with its expanded scapular area in *Madurea*, definitely removes it from the neighbour-

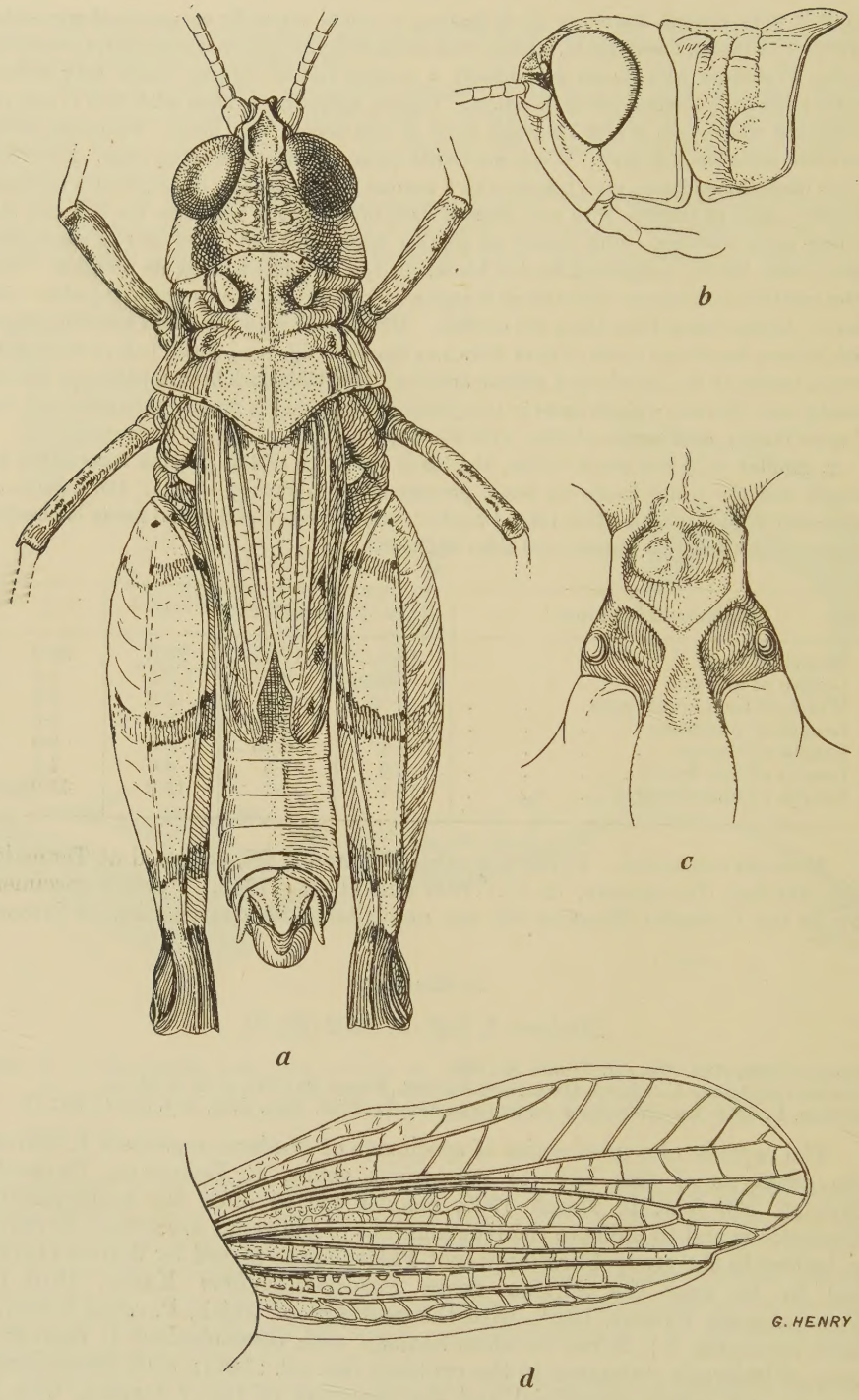

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Fig. 3.—*Madurea cephalotes* I. Bolivar. (a) ♂, dorsal; (b) ♂, head and pronotum, lateral; (c) ♀, fastigium of vertex; antero-dorsal view; (d) ♂, right tegmen.

hood of *Gymnobothrus*; the foveolae also are different in structure and the hind femur is provided with a row of stridulatory pegs which are absent in *Gymnobothrus*.

Points of affinity with *Paragymnobothrus* are as follows : structure of vertex, tarsi and hind tibial spurs; the pronotum, though strongly constricted in the middle and ruggedly folded on the sides, shows general similarity with that of *Paragymnobothrus*, and the sternal plate differs only in having the metasternal lobes separated in the ♀, not contiguous as in the latter genus. *Madurea* differs from *Paragymnobothrus* in the following features : form shorter and stouter; brachypterous; mesozona of pronotum ruggedly folded; limbs shorter and stouter.

Bolivar's generic diagnosis may be amended and supplemented as follows : foveolae not truly open beneath but closed by a feeble carina, not easily distinguished except in a good light (see fig. 3, c, which represents the ♀ vertex as seen from in front and above); the inner pair of spurs of hind tibia are long but not otherwise specialised; the tarsi, especially the hind, have their third segment with its claws and arolium small and weak (as in *Paragymnobothrus*).

The occurrence in South India of a genus whose nearest relations are South African is of considerable zoogeographical interest.

Dhimbama gen. n. (fig. 4).

Of medium size, male much smaller than female; elongate, slender, slightly compressed, brachypterous; of brown or " dry-grass " colour.

Head elongate, conical, porrect, much longer than pronotum; face very reclinate. Fastigium of vertex about as long as an eye, parabolic, with well-developed median and lateral carinae. Foveolae shallowly concave, extending half-way from eye to apex of fastigium; beneath the lateral foveolar carina a supplementary carina encloses an elongate area in which the lateral ocellus is situated. Frontal ridge sulcate, its carinae subparallel or feebly diverging until below the median ocellus, thereafter more strongly diverging to clypeal suture. Lateral facial carinae strongly developed. Eyes elliptical, strongly oblique. Ocelli feeble especially in ♀. Antenna in ♀ as long as head and pronotum, in ♂ much longer; flagellum in ♀ triangular in section at base for more than half, thereafter cylindrical; the basal portion strongly expanded dorso-externally, flat ventrally; in ♂ ensifrom in basal third only, thereafter cylindrical. Pronotum laterally compressed, parallel-sided, rounded above, with distinct median and lateral carinae and a tendency to develop supplementary carinae; rounded in front, very obtuse-angled or rounded obtuse behind; median carina cut only by the principal sulcus far behind the middle; a sub-marginal sulcus confined to sides and another sulcus, well developed, about middle. Lateral lobes longer than high, their lower margin nearly straight, strongly thickened, parallel with dorsal outline; front margin shallowly emarginate, front angle obtuse, hind angle rounded-acute, hind margin concave, humeral bay absent. Tegmen in ♂ shorter than hind femur, narrow, with anal margin evenly curved, costal margin concave a little before the middle; scapular area feebly expanded, with rather regular cross-veins and large areoles, forming a vibratory surface; general character of venation shown in fig. 4, e. Vein *R* raised to form a scraper in conjunction with the stridulatory pegs on hind femur as in related genera. Tegmen in ♀ lanceolate, relatively broader than in ♂, without scapular expansion. Wings in both sexes much shorter than tegmina, semi-abortive. Prosternum transversely gibbose but not tuberculate. Sternal plate flat, punctured; mesosternal lobes, in both sexes, semicircularly curved on their inner sides, separated in the middle by about a third of their width; metasternal lobes contiguous. Limbs short and slender. All genicular lobes rounded, unarmed. Fore femur cylindrical, not carinate. Mid femur feebly compressed, with strong,

longitudinal, outer dorsal and outer ventral carinae. Hind femur slender, compressed, its dorsal and ventral margins nearly straight from widest part, near base, to narrowest part before knee; on its inner face with a supernumerary carina bearing a row of stridulatory pegs. Fore tibia cylindrical; mid tibia somewhat compressed, feebly sulcate on its outer face; hind tibia of normal form, spines on inner and outer dorsal aspect numerous, not ridged as in *Brachycrotaphus*; no outer apical spine. Abdomen extending far beyond hind femur, slender, compressed. Auditory tympanum deeply set, dorsally operculate. Male supra-anal plate triangular, shallowly sulcate medially; ♂ cerci simple; ♂ subgenital lamina

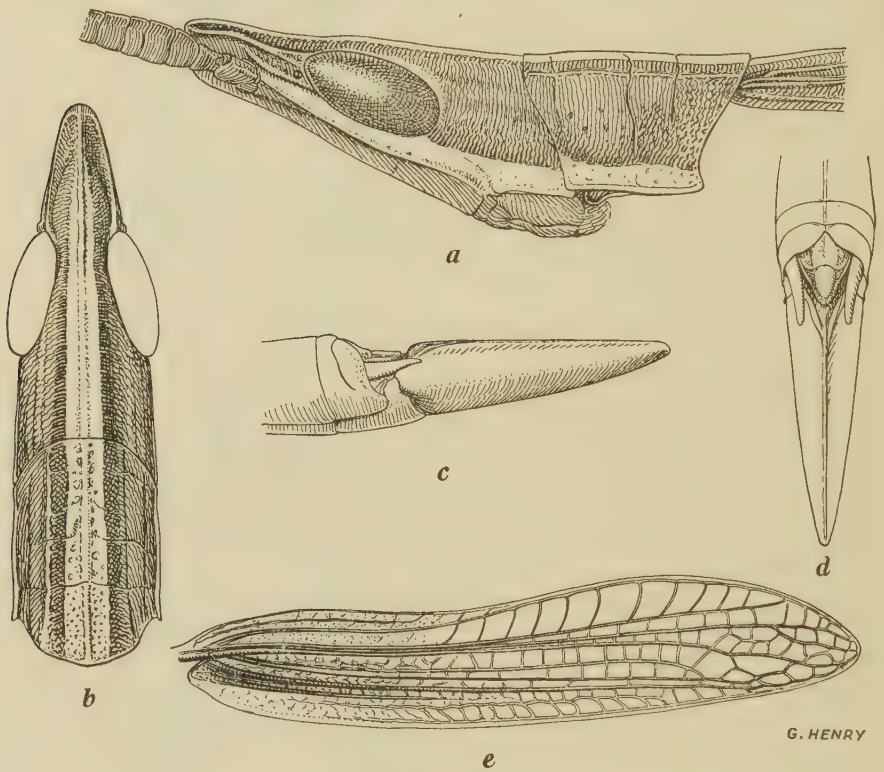

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Fig. 4.—*Dhimbama dawsoni* gen. et sp. n. (a) ♂, head and pronotum, lateral; (b) ♂, head and pronotum, dorsal; (c) ♂, genitalia, lateral; (d) ♂, genitalia, dorsal; (e) ♂, right tegmen.

elongate, conical, with a strong dorsal carina. Female supra-anal plate large, triangular, with median sulcus across middle as in ♂; ♀ cerci short, conical; ♀ paraprocts large, reaching apex of supra-anal plate; valves of ovipositor very short, when retracted concealed dorsally by the large paraprocts and supra-anal plate.

Genotype: *Dhimbama dawsoni* sp. n.

This new genus belongs to the group Mesopses and is intermediate in many of its characters between *Mesopsis* and *Brachycrotaphus*. With the former it shows affinity in its elongate form, structure of antennae, and ♂ genitalia but it is less specialised than *Mesopsis* in these features; it resembles *Brachycrotaphus* in the structure of foveolae, carinae of pronotum etc., but

differs from it in the unspecialised hind tibial spines, in much simpler venation, and in genitalia. From both genera it differs in having no distinct prosternal tubercle.

Dhimbama dawsoni sp. n. (fig. 4).

Type ♂. Fastigium of vertex feebly tectate, concave on each side in front of the elliptical sulcus (see fig. 4, b) convex behind it; the median carina continued throughout the length of the head. Face below lateral carinae very weakly punctured; dorsum of head with obscure, depressed, longitudinal lines. Antenna, laid back, reaching well beyond middle of hind femur; segments 3–9 dorsally expanded in a decreasing degree, remaining segments more or less cylindrical, gradually tapering. Pronotum shallowly and irregularly punctured, the punctures on metazona finer and more numerous but still irregular; the median white fascia is feebly and irregularly callous. Tegmen as figured. Wing less than half as long as tegmen, semi-abortive. Meso- and meta-pleura punctured like the pronotum. Sternal plate closely punctured almost all over. Abdominal tergites closely and shallowly punctured dorsally. Hind tibia with 12 outer, 13–14 inner spines (including an apical inner spine). Genitalia as figured.

Coloration. Antennae, dorsum of head, pronotum, pleurae, tegminal veins and abdomen dark reddish-brown; a pale straw yellow, median, dorsal fascia on head, pronotum and anal margin of tegmina, obscure continued along abdomen; a similar straw-coloured, lateral fascia commencing at base of antenna, passing below eye, across lower part of genae and lower margin of lateral lobes of pronotum and crossing pleura; face, mouth-parts and sternum greenish-yellow; all femora greenish-yellow; fore and mid tibiae and tarsi pale green; hind tibiae and tarsi pale bluish-green, spines black tipped.

♀. This agrees with the ♂ in ambisexual characters but is much larger, with proportionately deeper head. Antenna laid back reaches not beyond base of hind femur; segments 3–12 or 13 are dorsally expanded in a lamina of evenly decreasing depth. Eye proportionately smaller than in the ♂. Puncturation of head, pronotum, pleural sternum and abdomen as in the ♂ but relatively coarser, especially on the face. Tegmen relatively shorter and broader than in the ♂, rounded-acute at apex with no scapular widening; about as long as from front margin of eye to hind margin of pronotum.

Considerable variation in coloration is shown by the series before me; thus, some topotypical paratypes have the face below lateral carinae dark brown and the green coloration of sternum and limbs is replaced by pale brown. Two ♂♂ and a ♀ from Alagar Kovil are pale ochraceous brown with only a trace of the pale fasciae of the Dhimbam specimens. At the time of capture these Alagar Kovil specimens were noted to be very pale coloured, suggesting larvae. The ♂ tegminal shape and venation also varies rather strongly and fig. 4, e, which represents the tegmen of the type, must be taken as giving only a general idea of the character of the venation; for instance, the number of cross-veins in the enlarged scapular area varies in topotypical ♂♂ from 7 to 11 and they are not always so regularly arranged as in the type.

Measurements in mm.	Type ♂	Alagar Kovil ♂	Dhimbam ♀	Alagar Kovil ♀
Length of body	26·0	27·4	35·0	38·0
Length of antenna, *ca.* . . .	15·0	14·0	13·5	15·0
Width of head across eyes . .	2·0	2·3	2·8	3·0
Length of pronotum . . .	3·4	3·7	5·2	5·4
Length of tegmen	9·0	9·4	9·2	9·0
Length of fore femur . . .	2·5	2·4	3·3	3·3
Length of hind femur . . .	10·7	11·0	13·3	13·5

Material examined. Type ♂, 4 other ♂♂, and 3 ♀♀ from Dhimbam, Biligirirangan Hills, Coimbatore District 28 and 29.iv.1937; 2 ♂♂, 1 ♀ from Alagar Kovil, Madura District, 18.iii.1936; in both localities the insects were found living on the stems of coarse tussocky grass among thin scrub jungle.

Two ♂ specimens of a species or subspecies congeneric with *D. dawsoni* were collected near the Forest Bungalow, Chenat Nair Forest Reserve, Palghat on 16.iv.37, in tussocky grass. While very close to *D. dawsoni*, especially to the Alagar Kovil specimens, they differ in sundry features but also differ somewhat between themselves so that, until the geographic range and limits of variation of the species are better known, it is not worth while to put a name to them.

Dhimbama dawsoni is named in memory of Mr. E. S. Dawson, Forest Engineer, through whose generous help I was enabled, with my assistants, to visit Dhimbam and many other interesting places in South India. No difficulty would deter Mr. Dawson from doing everything in his power to help the expeditions, and the collections made on them would have been very much poorer without his enthusiastic assistance and hospitality. His death by drowning, in the Karimpuzha River at Nadungayam, Malabar, a place which I had visited with him and Mrs. Dawson about a fortnight previously, cast a gloom over the third expedition.

Phonogaster gen. n. (figs. 5–6).

Similar to *Pasiphimus* Bolivar in facies. Long, slender, with very long, narrow, acutely pointed tegmina and very abbreviated wings. Differing from *Pasiphimus* in the possession by the ♂ of a row of stridulatory tubercles on inner face of hind femur and the peculiar stridulatory specialisation of the abdomen described below. Coloration pale brown.

Head elongate, porrect, much longer than pronotum; with a strong median dorsal carina running the full length and several parallel carinae on dorsum. Fastigium of vertex considerably longer than eye, its sides straight and gradually converging anteriorly, apex obtuse; surface concave beyond the parabolic sulcus; foveolae elongate-triangular, extending beyond the middle of fastigium from eye; their surface flat, punctured. Below the foveolae a carina runs parallel with the outer foveolar carina, the lateral ocellus lying between the two carinae. Lateral facial carina strong. Frontal ridge sulcate, except for a short distance below its junction with the fastigium, narrow, its carinae sub-parallel until the median ocellus, thereafter diverging to clypeal suture. Eye not prominent. Ocelli small. Antenna ensiform.

Pronotum with strong median carina and lateral carinae and numerous parallel subsidiary carinae on dorsum and sides; with two transverse sulci of which the posterior alone cuts the median carina, and that far behind the middle; both cut the lateral carinae. Lateral lobes longer than deep, steeply sloping from the dorsal field; their front margin broadly emarginate; front angle obtuse; lower margin nearly straight, sub-parallel with dorsal profile and somewhat thickened; hind angle acute; hind margin concave with the subsidiary carinae slightly projecting in the form of blunt teeth; humeral bay absent. Tegmina projecting far beyond abdomen, straight, narrow, gradually tapering from about the proximal third, tips very acute; veins parallel with false veins between them; no expanded tympanate areas. Wings with well-developed venation but less than half tegminal length, narrow, acutely pointed.

Prosternum without a tubercle. Mesosternal lobes rounded internally, narrowly separated in ♂, more widely in ♀. Metasternal lobes contiguous in both sexes. Meso- and metapleura longitudinally ridged.

Legs short and slender. Fore and mid femora with several longitudinal low carinae; their genicular lobes rounded. Hind femur slender, convex externally, its knee slender; dorsal field of knee produced on each side into an elongate lobe; genicular lobes also strongly

produced. Inner face of hind femur with a row of stridulatory tubercles extending nearly to the knee. Hind tibia of normal form and armature, with no outer apical spine.

Genitalia : ♂. Supra-anal plate deeply channelled in basal half; cerci short, cylindrical tapering; subgenital lamina conical, somewhat produced, deeply channelled dorsally. Female genitalia similar to those of *Pasiphimus*.

Genotype : *Phonogaster cariniventris* sp. n.

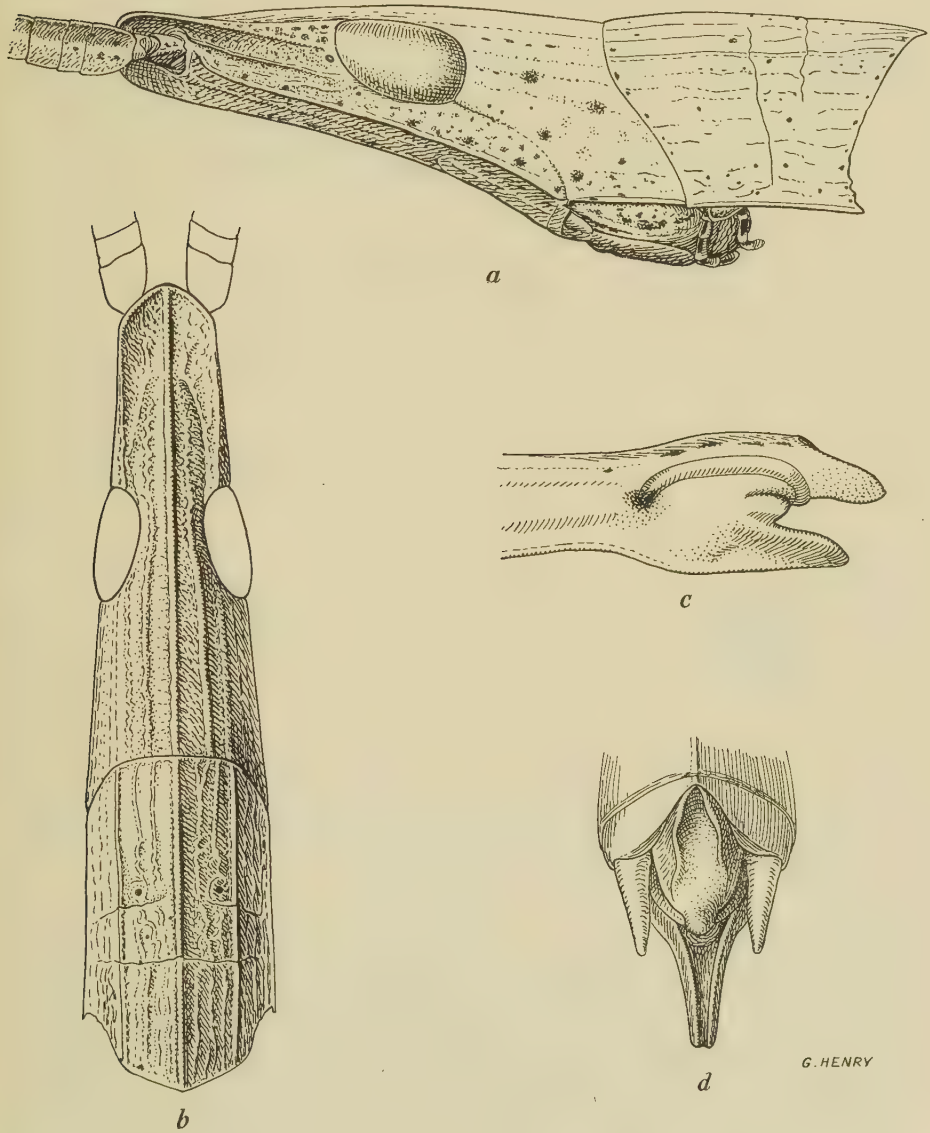

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Fig. 5.—*Phonogaster cariniventris* gen. et sp. n. (a) ♀, head and pronotum, lateral; (b) ♀, head and pronotum, dorsal; (c) ♀, left hind femoral knee; (d) ♂ genitalia, dorsal.

Phonogaster cariniventris sp. n. (figs. 5 and 6).

Male. Antenna, laid back, reaching nearly to the base of hind coxa; with basal 9 segments of flagellum strongly tricarinate, remaining segments cylindrical. Dorsum of head, behind middle of eye, with 7 carinae including the strong median one. Face and lower part of genae obsolescently impresso-punctate. Head less deep than in the ♀ but otherwise similar. Pronotum with two supplementary carinae on each side of dorsal field, between

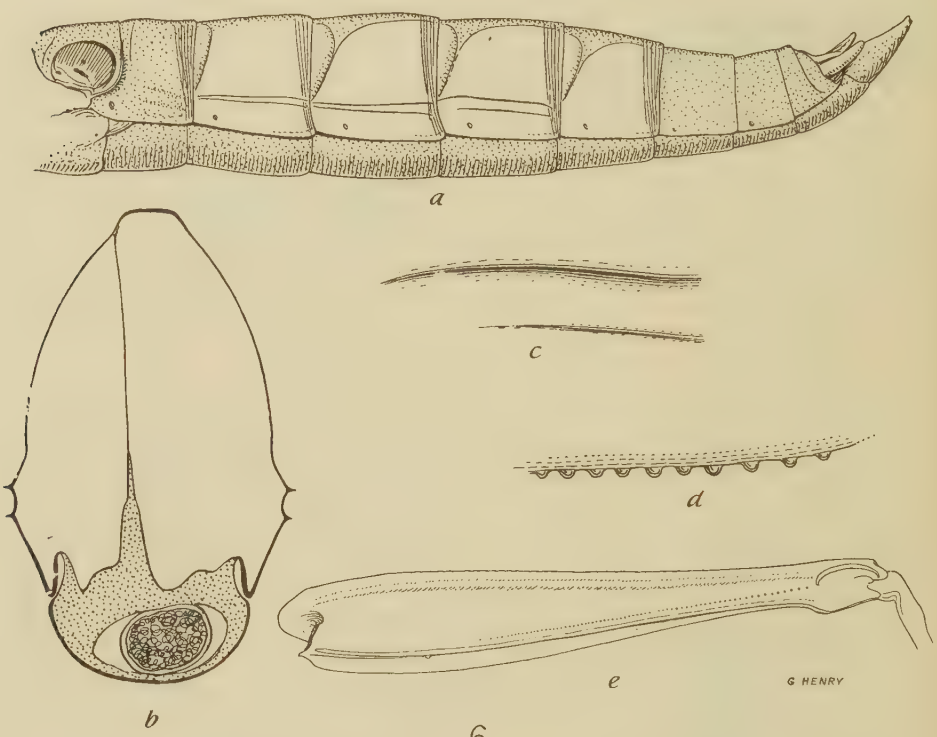

Fig. 6.—*Phonogaster cariniventris* gen. et sp. n. (a) ♂, abdomen, showing lateral ridges and tympanate tergites; (b) ♂, abdomen, transverse section of 5th segment, showing lateral ridges and large air-sacs; (c) ♂, 1 mm. of ridges on 5th tergite; (d) ♂ right hind femoral knobs, distal portion of row, dorsal aspect; (e) ♂ right hind femur, inner side, showing row of knobs.

the median and lateral carinae; a black, callous spot on each side of dorsal field, just in front of the anterior sulcus. Lateral lobes relatively longer in relation to their depth than in the ♀, and with lower margin feebly concave in the anterior half. Tegmina extending beyond the fully extended hind leg; widest about the proximal fourth, thence gradually tapering to the very acute apex; showing, in the middle portion, 10–11 longitudinal veins and false veins. Wings less than half tegminal length, acutely pointed. Meso- and metapleura with broken longitudinal carinae similar to those on lateral lobes of pronotum. Abdomen with tergites 3–6 hollow and tympanate (fig. 6, a); tergites 3–5 each with a pair of sharp, longitudinal ridges on each side in the lower part (fig. 6, b, c, a description of this stridulatory apparatus will appear elsewhere). Hind femur with knees and their lobes shaped as in fig. 5, c (the inner lobes are similar but less produced). Their inner face provided with a row of stridulatory pegs, fine proximally, coarse distally, extending from

about the basal third nearly to the knee (fig. 6, d, e). Hind tibia with 11–13 outer, 14–15 inner spines.

In the ♀, the antennae are relatively broader and a little shorter than in the ♂ and have the 11 proximal flagellar segments tri-carinate; the tegmina reach only to about the middle of the tarsus in the fully extended hind leg; the wings are only about ⅓ the tegminal length; the abdomen is not modified for sound-production and the ridges on the sides of tergites 3–5 in the ♂ are represented only by low linear swellings.

Genitalia : ♂. Feebly recurved. Supra-anal plate triangular, deeply channelled between two sinuous carinae in basal part, apex blunt. Cerci cylindrical, tapering. Subgenital lamina conical, somewhat produced, deeply channelled dorsally, apex truncate. ♀. Supra-anal plate triangular, compressed, transversely sulcate across middle, concave in dorsal profile, tip decurved. Cerci short, conical. Ovipositor rather short; dorsal valves with simple, trenchant edges; ventral valves with a single strong tooth about the middle.

Coloration. Light brown, with a variable tendency to develop longitudinal stripes of darker brown; there is also a tendency for " peppering " of the whole insect with small black specks.

Measurements in mm.	Type ♂	♂	♀	♀
Length of body	22·5	23·0	30·0	32·5
Length of antenna	10·0	10·0	11·0	11·7
Width of head across eyes	1·8	1·9	2·3	2·6
Length of pronotum	3·3	3·25	4·8	5·0
Length of tegmen	21·0	19·5	25·3	28·5
Width of tegmen	*ca.* 1·7	1·7	*ca.* 2·6	2·7
Length of wing	?	8·0	?	8·7
Length of fore femur	2·5	2·6	3·25	3·3
Length of hind femur	9·0	8·8	11·0	12·2

Material examined. Type ♂, 4 other ♂♂, 3 ♀♀ from Dhimbam; 1 ♂, 1 ♀ from Hasanur. The insects were taken among coarse grasses with a thin shade of small trees.

Observation of living individuals of this insect is very desirable in order to ascertain the precise manner of using its peculiar stridulatory apparatus.

Psectrocnemus gen. n. (figs. 7–8).

This new genus is erected to accommodate *Ochrilidia longiceps* Bolivar (1902 : 595), of which specimens, agreeing excellently with the description, were taken by the third British Museum–Colombo Museum Expedition to S. India, at Dohnavur, Tinnevelly District.

Very near to *Brachycrotaphus* Krauss but carrying the distinctive specialisations of that genus very much farther. Very slender and elongate, laterally compressed. Head much longer than pronotum, strongly porrect, line of face nearly or quite parallel with lower margin of lateral lobes of pronotum. Fastigium of vertex longer than the eye, feebly tectate, medially and laterally carinate, elliptical at apex, with a circular groove on dorsum in front of eyes; foveolae elongate, not extending to apex of fastigium, defined by carinae above and below. Face with frontal ridge in side view, anteriorly obliquely truncate, thereafter straight, its carinae feebly diverging to the median ocellus, thereafter more strongly diverging to the clypeal margin. Lateral carinae slightly curved below eyes. Eyes oblique. Median and lateral ocelli well developed. Antennae in both sexes strongly ensiform, segments of the basal half except first two laminately expanded dorsally. Pro-

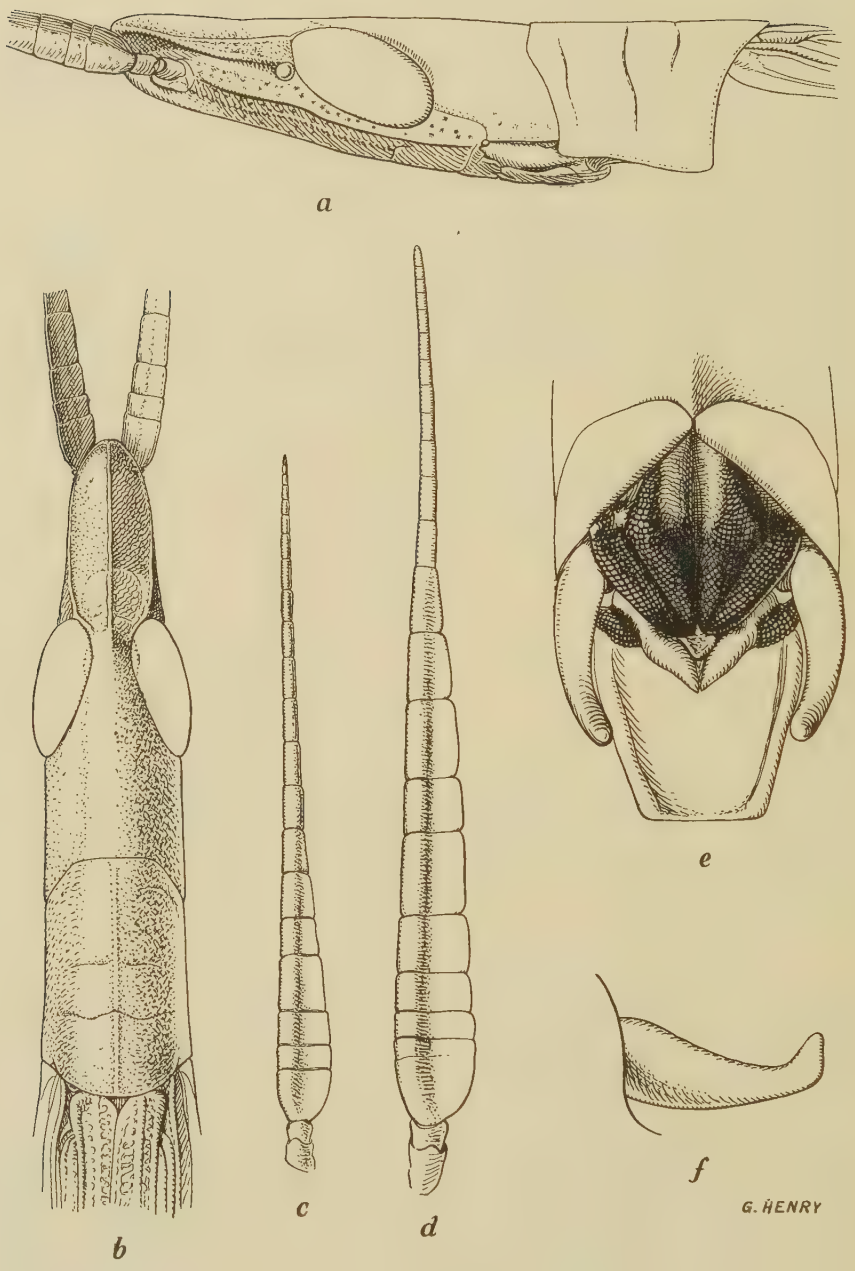

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Fig. 7.—*Psectrocnemus longiceps* (I. Bolivar). (a) ♂, head and pronotum, lateral; (b) ♂, head and pronotum, dorsal; (c) ♂, right antenna, interno-dorsal; (d) ♀, right antenna, interno-dorsal; (e) ♂, genitalia; (f) ♂, left cercus, lateral.

notum laterally compressed, rounded above, with a feeble median carina but no lateral carinae, truncate in front, rounded behind, only the principal sulcus cutting the median carina, and that well behind the middle. Lateral lobes longer than deep, their front, lower and hind margins feebly emarginate, front angle feebly obtuse, hind angle almost a right angle. Tegmina (fig. 8, a) long, very narrow, acutely pointed; scapular field in ♂ strongly expanded in the middle section, with regular cross-veins and large areoles; areoles between *M* and *Cu* in middle section of ♂ tegmen also large; vein *R* in the same region of ♂ tegmen dorsally raised to form a " scraper " vein; general character of venation similar to that of *Brachycrotaphus*; ♀ venation longitudinal and sub-parallel with scapular field only feebly expanded. Wings much shorter than tegmina, narrow, apically rounded-acute. Prosternum with a blunt tubercle. Meso- and metasternal lobes in both sexes contiguous for most of their length. Fore and mid legs very short, especially the tibiae. All genicular lobes rounded, unarmed, the anterior ones of fore and mid femora somewhat expanded. Hind femur short compressed, little incrassated basally; its inner face with an accessory carina armed with a row of stridulatory pegs. Hind tibia with no outer apical spine; some of the inner spines in the ♂ laminately expanded and armed with series of transverse ridges as in *Brachycrotaphus*. Male supra-anal plate (fig. 7, e) divided into four areas by a median and two oblique, lateral sutures; its surface shagreened; ♂ cerci recurved at tip; ♂ subgenital lamina not elongate or compressed, truncate-emarginate at tip. Female genitalia as in *Brachycrotaphus*.

Genotype : *Ochrilidia longiceps* I. Bolivar.

Psectrocnemus longiceps (I. Bolivar) (figs. 7 and 8).

Ochrilidia longiceps Bolivar, I., 1902, *Ann. Soc. ent. France* **70** : 595.
—— Kirby, W., 1910, *Syn. Cat. Orthopt.* **3** : 149.
Brachycrotaphus longiceps Uvarov, B., 1932, *Soc. ent. France, Livre Centenaire* : 299.

Bolivar's description, supplemented by the generic characters and figures given herewith, is adequate for the male. The female agrees with the ♂ in all ambisexual characters but is much larger, with less linear head, antennae relatively broader in the basal part, tegmina very long, narrow and pointed, with only a feeble trace of the scapular expansion found in the ♂; hind tibial spines with only a trace of the transverse ridges found in the ♂. In the latter the development of these spines varies somewhat; the total number of inner spines is 12 to 14 (not counting the apical one) and, counting from the base the first to show ridges is usually number 7, from which the specialisation increases up to numbers 9, 10 or 11, decreasing in size but becoming finer until the end of the series; the apical spine in some cases shows traces of ridges (fig. 8, b, c, d). The stridulatory pegs on inner face of hind femur are much finer than in *Brachycrotaphus steindachneri* and are finest in the middle of the series. In the ♀, though present, they are less well developed than in ♂.

Measurements in mm.	♂♂		♀
Length of body	23·5	23·5	37·0
Length of antenna	9·4	9·7	11·8
Width of head across eyes	2·1	2·1	2·9
Length of pronotum	3·4	3·4	4·8
Length of tegmen	19·6	20·5	29·6
Width of tegmen at middle	2·8	2·7	2·5
Length of wing	16·0	16·5	22·7
Width of wing	5·5	5·0	7·5
Length of fore femur	1·7	1·6	2·3
Length of fore tibia	1·4	1·3	1·7
Length of hind femur	9·7	10·0	14·0
Length of hind tibia	8·7	9·0	12·0

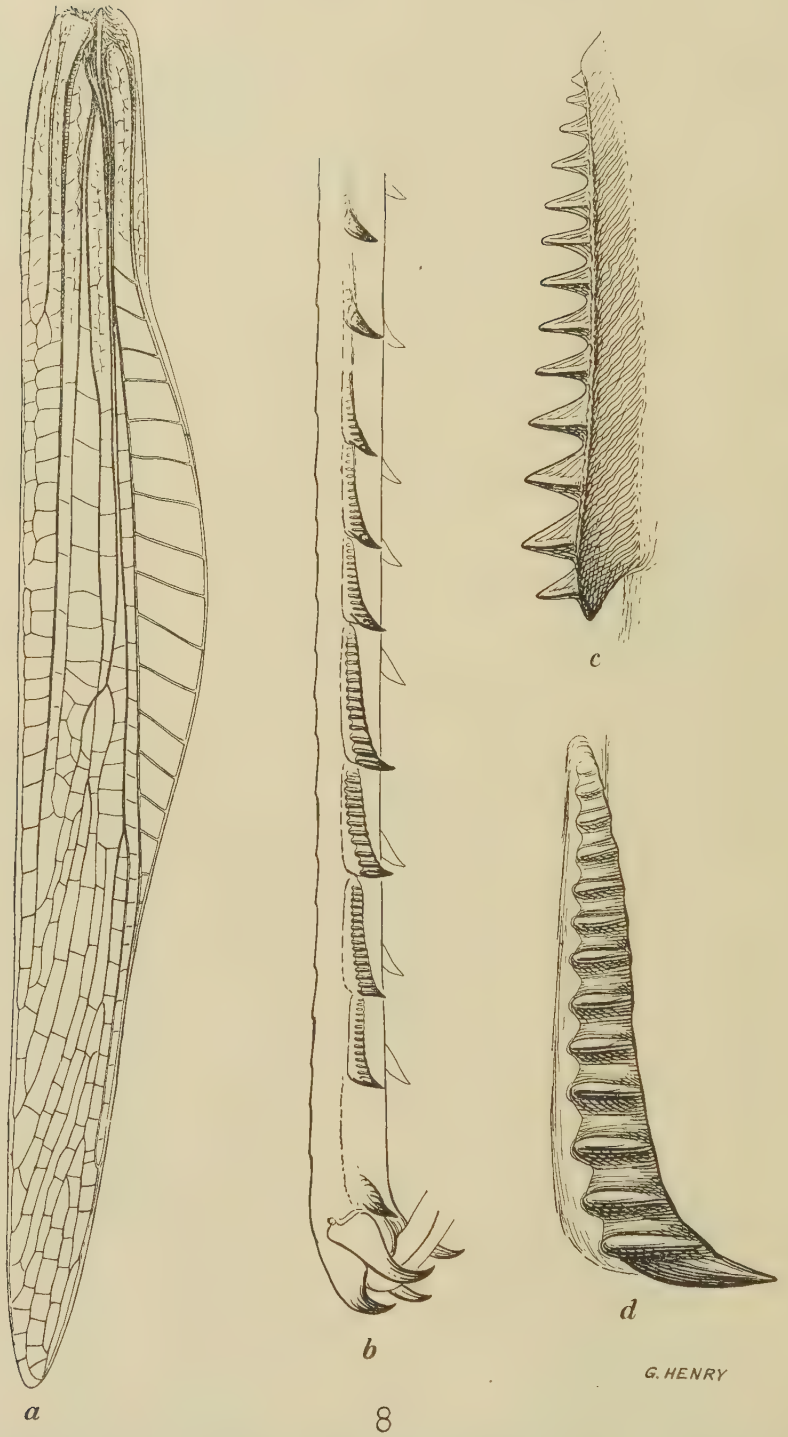

Fig. 8.—*Psectrocnemus longiceps* (I. Bolivar). (a) ♂, right tegmen; (b) ♂, right hind tibia (distal half) showing serrated internal spines; (c) and (d) ♂ hind tibial spine (5th from distal end) showing dorsal and inner aspects.

Material examined. 4 ♂♂, 1 ♀ captured at Dohnavur, 350 feet, Tinnevelly District, South India, 30.ix. and 10.x.1938. They were taken by me in a field of grass, with slender flowering stems about 18 inches high, beneath a sparse growth of Palmyra palms near the foot-hills of the Tinnevelly mountains. The Acridians were found on the stems of the grass, and when disturbed flew with a jerky, rapid flight for a few yards before settling on another stem. Want of time unfortunately prevented me from making any observations on their stridulation, which, in view of the pectinate hind tibial spines, stridulatory pegs on hind femur and modified tegmina in the ♂, is probably very interesting.

A large number of specimens of an Acridian congeneric and probably also conspecific with this was collected by me some years ago at Marai Villn, N.W. Province, Ceylon, and these were provisionally determined as *Ochrilidia longiceps* Bolivar; but unfortunately they are not available for study at the moment.

Catantopinae.

Tinnevellia gen. n. (fig. 9).

Apparently related to *Xenippa* Stål but differing from his description as follows :—

Semilunar sulcus of fastigium not between the eyes but well in front of them; fastigial carina not continuous but absent in front of the semilunar sulcus.

Very long and slender with porrect head, short legs; micropterous; coloration pale green or ochraceous, with or without brown dorsal fascia.

Fastigium elongate, with sides converging forwards, tip rounded; with parabolic sulcus well marked, behind the middle of fastigium; in front of parabolic sulcus surface gently rounded with no median carina; behind parabolic sulcus a median carina more or less well developed; sides strongly carinate; small, narrow foveolae extending less than half length of fastigium in front of eye and not nearly reaching base of antenna. Frontal ridge strongly compressed and laminate from apex to below bases of antennae, thence gradually widening to clypeal suture; its surface flat and punctured but scarcely sulcate. Lateral facial carinae obsolescent in the anterior half. Mandibles with several deep, curved, parallel grooves on outer (ventral) face. Eyes very depressed in both sexes. Ocelli small but distinct, the lateral ones near front margin of eye. Antenna ensiform in ♀, less so in ♂. Pronotum semi-cylindrical, somewhat compressed, parallel-sided, with distinct median carina, no lateral carinae; front margin broadly rounded, hind margin truncate or medially emarginate; with three shallow transverse sulci, of which the anterior is widely interrupted in the middle; the second, at about the middle, may or may not cut the median carina; the posterior is well behind the middle and cuts the median sulcus. Lateral lobes longer than deep, with lower margin nearly straight, thickened, sub-parallel with dorsal profile; front angle obtuse, hind angle acute. Tegmen not reaching much beyond first tergite, lateral, narrow. Wings present but very narrow, acutely pointed. Prosternal tubercle well developed, more or less tongue-shaped, produced backwards, base constricted and pedunculate. Meso- and metasternal lobes contiguous in both sexes. Fore femur cylindrical, without carinae. Mid femur somewhat compressed, with a well-developed outer dorsal carina. Genicular lobes of fore and mid femora rounded. Hind femur not reaching beyond the 5th tergite, slender but rather thick as seen from above, outwardly rounded, carinae not pronounced; its genicular lobes short, rounded. Hind tibia unspecialised, armed with an outer dorsal apical spine. Tarsi unspecialised; arolia large. Abdomen very long and slender, particularly in ♂. Auditory tympanum open but slightly sunk in first tergite; covered by apical portion of tegmen.

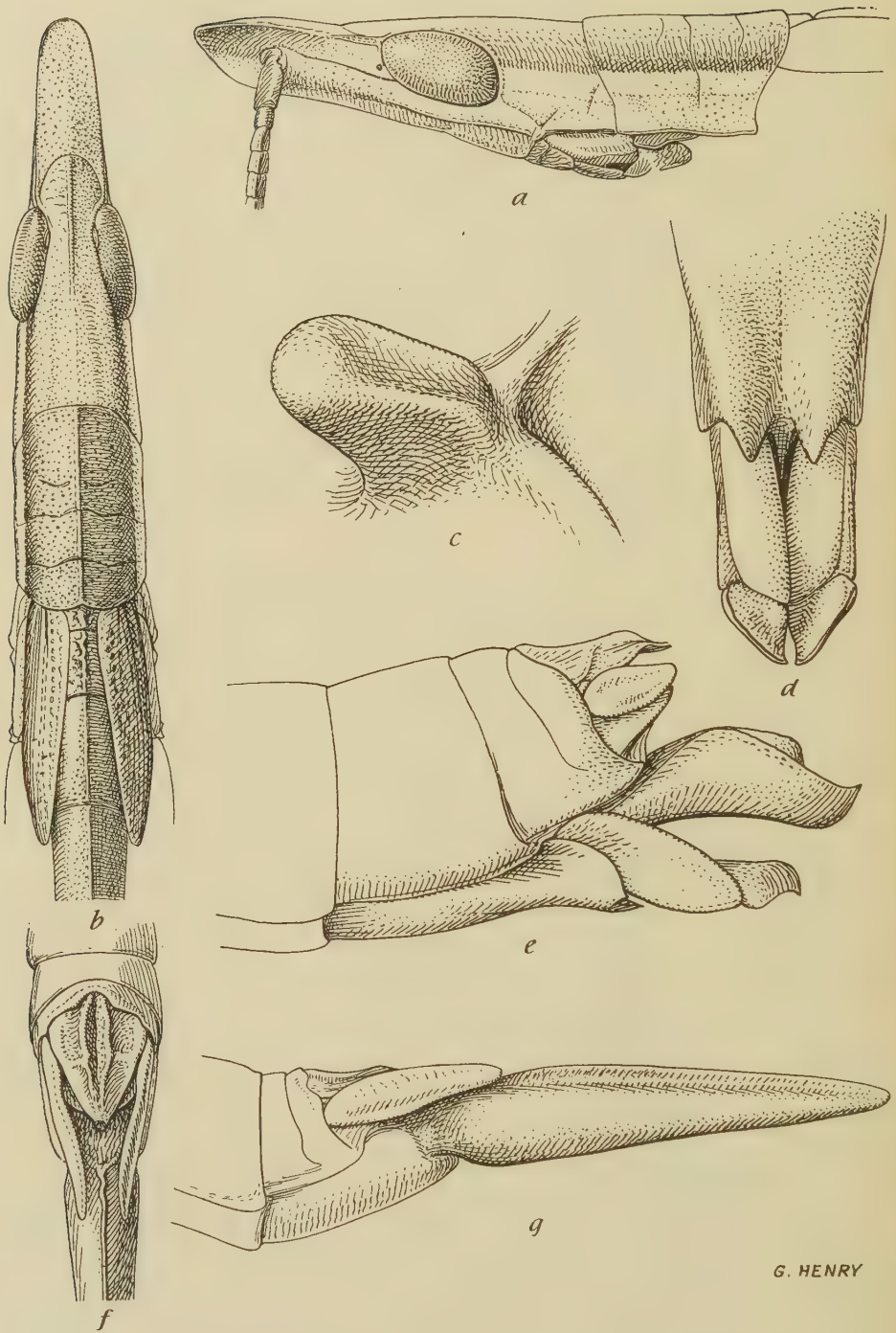

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Fig. 9.—*Tinnevellia andrewi* gen. et sp. n. (a) ♂ (type), head and pronotum, lateral; (b) ♂ (type), head and pronotum, dorsal; (c) ♀, prosternal tubercle (setae omitted); (d) ♀, genitalia, ventral; (e) ♀, genitalia, lateral; (f) ♂, genitalia, dorsal; (g) ♂, genitalia, lateral.

Genitalia : ♂. Supra-anal plate triangular, deeply channelled and bicarinate medially. Cerci very long, lanceolate, strongly compressed. Subgenital lamina strongly produced, tapering to an acute point, somewhat compressed, dorsally ridged.

♀. Supra-anal plate triangular, dorsally channelled, somewhat compressed. Cerci elongate-ovate, strongly compressed, not extending beyond supra-anal plate. Ovipositor unspecialised; edges of valves trenchant, not toothed. Subgenital lamina with its margin variously toothed or angulated.

Genotype : *Tinnevellia andrewi* sp. n.

Tinnevellia andrewi sp. n.[2] (fig. 9).

Type ♂. Dorsum of fastigium of vertex impresso-punctate. Median carina behind parabolic sulcus well developed but obsolescent behind level of hind marign of eyes. Occiput irregularly impresso-punctate. Sides of fastigium below lateral margins, surface of frontal ridge, face below lateral carinae, finely punctured. Lower part of genae irregularly punctured. A sulcus runs from dorsal base of antennal scrobe to lower margin of eye, passing close below the lateral ocellus. Antenna, laid back, reaching nearly to base of mid femur; segments 3–10 or 11 expanded dorso-externally; fourth or fifth segment widest, thence decreasing evenly; distal segments compressed-cylindrical, slowly tapering to tip. Pronotum with hind margin bi-convex, angularly emarginate in the middle. Median carina cut by two posterior sulci. Surface of pronotum almost everywhere closely but irregularly impresso-punctate. Tegmen reaching to about the proximal fourth of tergite 2; narrowly lanceolate, with tip rounded. Wing reaching margin of tergite 1; very narrow and acute. Meso- and metanota and all tergites medially carinate and punctured on each side of the carina. Prosternal tubercle similar to the figure (which represents that of the Naraikādu ♀) but narrower and with distal margin feebly bilobed. Sternal plate rather closely punctured everywhere, hirsute, its median area rather deeply concave. Pleura impresso-punctate; a short carina crossing mesoepisternum in line with the thickened lower margin of pronotum. Metepisternal carina longitudinal in direction. Hind tibia with 9–10 outer, 12–13 inner, unspecialised spines.

Coloration. Ventral part of head and thorax, and all limbs, yellowish-green; antennae dark brown; dorsum of head, pronotum, meso- and metathorax, and abdomen light reddish-brown, also the tegmina; the lower portion of the brown dorsal fascia, in a line from the back of eye, across upper part of lateral lobes of pronotum, upper part of pleura and costal margin of tegmina is darker brown; below this dark line there is a pale line from back of eye, across sides of head, pronotum and pleura; the thickened lower margin of lateral lobes of pronotum is pale.

♀. Considerably larger and stouter than the ♂ and almost concolorous, pale yellowish-green. Antenna, laid back, scarcely reaching fore coxa; compressed throughout, segments 3–13 or 14 laminately expanded dorso-externally, segments 6 and 7 the widest. Median carina on occiput feeble.

Genitalia : ♂ and ♀. These are shown in fig. 9, d, e, f, g.

It will be seen from these measurements that a considerable discrepancy in size exists between specimens from Naraikādu and those from Dohnavur, but as no constant structural differences can be detected they are all treated as belonging to one species. No doubt subspecific distinctions will be recognised when the range of the insect is known and adequate material is available. The

[2] Named in honour of my Sinhalese collector, K. L. Andrew Perera (" Andrew "), who has accompanied me on numerous collecting trips, including the three expeditions to South India, and by keenness, hard work, patient endurance of hardships and discomforts has added enormously to the collections obtained.

prosternal tubercle in some specimens—including the type—is feebly bilobed distally, but this feature shows no constancy even in a series from the same locality. One Dohnavur ♂ has the limbs and ventral portions of the body ochraceous brown instead of green.

Measurements in mm.	Type ♂ (Naraikādu)	Dohnavur ♂	Naraikādu ♀	Dohnavur ♀
Length of body . . .	*ca.* 48·0	*ca.* 39·0	*ca.* 58·0	*ca.* 52·0
Length of antenna . . .	13·4	12·0	13·2	11·3
Width of head across eyes . .	3·0	2·5	3·9	3·4
Length of pronotum . . .	4·75	3·8	6·8	5·9
Length of tegmen . . .	6·0	4·8	6·8	6·7
Width of tegmen . . .	1·3	1·0	1·75	1·5
Length of fore femur . . .	4·0	3·25	4·6	4·0
Length of hind femur. . .	14·0	12·25	18·0	16·5

Material examined. Type ♂ and one ♀ from Naraikādu, 3000 feet, Tinnevelly Hills, 3–8.x.1938; 3♂♂, 2 ♀♀ from Dohnavur ca. 350–500 feet (foot-hills of the same range as the Naraikādu specimens), 4–10.viii.1938.

Calamippa gen. n. (fig. 10).

This new genus is proposed for the accommodation of *Xenippa prasina* I. Bol., 1902 (*Ann. Soc. ent. France* **70** : 617), as the capture of specimens in South India, which agree with Bolivar's description, leaves no room for doubt that his *prasina* does not belong to *Xenippa* Stål.

Very slender and elongate, somewhat compressed, with strongly porrect head; fully winged; coloration green or brown, with red wings.

Head rounded, compressed-cylindrical, face very reclinate. Fastigium of vertex long, parabolic at tip, its sides gradually converging forwards; rounded-tectate dorsally, with median carina feeble or incomplete; sides carinate in front; foveoles feebly indicated, extending almost the length of fastigium; a shallow transverse depression in ♀ at base of fastigium, between eyes. Frontal ridge strongly compressed from tip of fastigium to bases of antennae, thereafter its sides gradually diverging to clypeal sulcus; lateral facial carinae strong, nearly straight; lower margin of genae thickened, in same line as lateral facial carinae. Clypeus medially concave, the concavity bounded laterally by thick carinae.

Eyes very depressed in both sexes. Ocelli small but distinct, the lateral ones near front margin of eyes. Antennae strongly ensiform.

Pronotum rounded above, compressed, with median carina feeble, lateral carinae absent; truncate in front, rounded-produced behind; with three shallow transverse sulci, all of which are continuous across the dorsum. Lateral lobes longer than high, their front margin feebly concave, front angle acute (distinctly toothed in ♂), lower margin nearly straight, callously thickened, in line with lower margin of genae; hind margin sinuously concave, humeral bay not marked. Tegmina long, narrow, acutely rounded at tip. Veins nearly straight and parallel, with false veins between them. Costal field, especially in ♂, somewhat expanded and tympanate in the middle portion; vein *R* in the section opposite to this expansion prominent and provided with a row of stridulatory tubercles. Wings fully developed.

Prosternal tubercle well developed, compressed (fig. 10, c). Sternal plate transversely concave. Meso- and metasternal lobes contiguous in both sexes. Mesoepisternum crossed by a callous carina in line with lower margin of pronotum. Fore and mid legs short, their

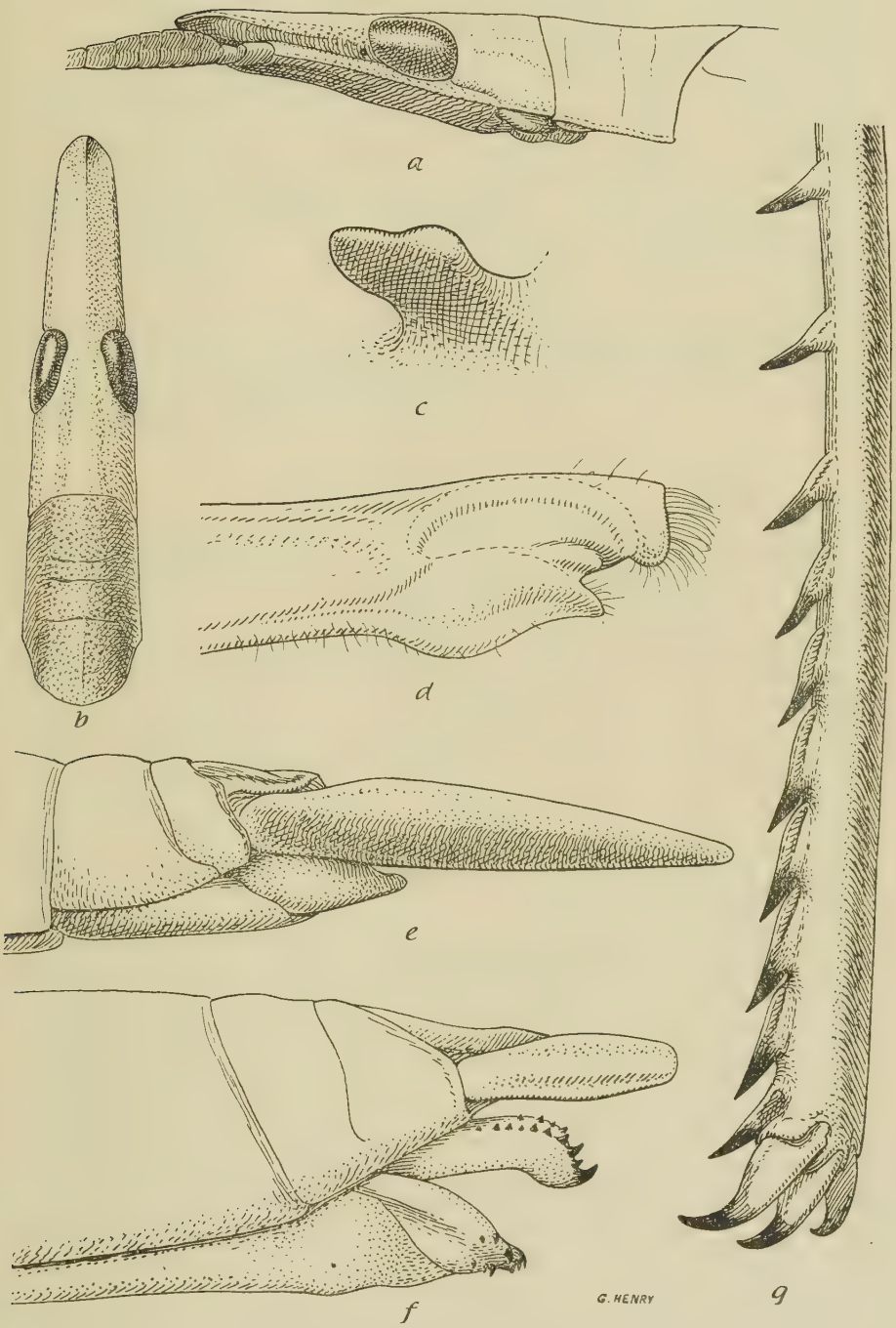

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Fig. 10.—*Calamippa prasina* (I. Bolivar). (a) ♂, head and pronotum, lateral; (b) ♂, head and pronotum, dorsal; (c) ♂, prosternal tubercle, left side; (d) ♀, left hind knee; (e) ♂, genitalia; (f) ♀, genitalia; (g) ♂, left hind tibia, ventro-internal aspect, showing modified spines.

anterior genicular lobes rounded-produced, the posterior obliquely truncate. Fore tibia shorter than its tarsus. Hind femur slender, rounded outwardly, its outer carinae not prominent; hind knees shaped as in fig. 10, d. Hind tibia shorter than hind femur, with an outer apical spine; in ♂ with the distal, inner spines strongly reclinate and sharp edged (? modified to act as a scraper for use with the stridulatory tubercles on vein *R* of tegmen; see fig. 10, g).

Abdomen extending far beyond hind femur. Male cerci very long, lanceolate, compressed (fig. 10, e), extending far beyond the subgenital lamina. Female cerci long, compressed, extending beyond ovipositor, ovipositor with dorsal and ventral valves armed with double rows of black spinules (fig. 10, f).

Ventral surface of body and limbs clothed with rather abundant soft setae.

Genotype. *Xenippa prasina* I. Bolivar.

This new genus shows affinity with *Pseudocarsula* Kirby, 1914, in the structure of the ♂ cerci, limbs etc., but differs from it strongly in the very elongate form and quite different stridulatory mechanism of the ♂.[3]

Calamippa prasina (I. Bolivar) (fig. 10).

Xenippa prasina Bolivar, I., 1902, *Ann. Soc. ent. France* **70** : 617.
—— Kirby, W. F., 1910, *Syn. Cat. Orthopt.* **3** : 408.

Bolivar's original description, which, from the measurements, must have been drawn up from a ♂, although he does not say so, may be supplemented by the following notes on the specimens before me.

Antennae in ♀ tapering evenly from 3rd segment (first of flagellum) to tip; more or less compressed throughout; laid back, reaching to at least the base of mid femur. Tegmina in both sexes extending well beyond hind knees. Hind tibiae armed (♂) with 17–18 outer, 18–19 inner; (♀) 14–18 outer, 15–18 inner spines. In the ♀ both inner and outer spines are of the normal type, but in the ♂ the inner, distal 6 or 7 spines are modified as shown in fig. 10, g.

In the ♀, the lower portion of tergites 6–8 is longitudinally callously thickened and rugulose; this feature is scarcely apparent in the only ♂ available. It may be noted that the callosity commences just beyond the portion of the abdomen covered by the hind femur when this is pressed against the side.

Genitalia : ♂. Supra-anal plate triangular with convex sides and acutely-projecting apex; with a wide median sulcus bounded by a carina on each side. Cerci strongly compressed and in dorsal view slightly incurved so as to meet each other beyond the supra-anal plate. Subgenital lamina short, tapering, its tip compressed. ♀. Supra-anal plate like that of the ♂ in general character but much more compressed, extending little beyond middle of cerci. Valves of ovipositor with numerous small black spines arranged in rows (fig. 10, f). Subgenital lamina ventrally flattened, sides compressed, apex obtuse-angled.

Coloration. The ♂ and one ♀ before me are green as in Bolivar's type. The wings are rich pink except on distal part of costal area where the membrane is colourless, veins green. The callous ridge formed by the margins of genae, lower margin of pronotum and carina across mesoepisternum is yellow. The remaining females are brown, with pink wings and yellow lateral stripe on head and thorax as in the green specimens. These two ♀♀ are larger than the green one but appear to show no other differences.

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[3] I take this opportunity of pointing out that *Esoacris aberrans* Willemse (1939, *Natuurhist. Maandblad* **28** : 90 from Sylhet, Assam, is conspecific with *Pseudocarsula tarsalis* (Walker) (*Opomala tarsalis* Walker, 1870, *Cat. Derm. Salt.* **3** : 512), from the same locality; and as *Esoacris* is monotypic it falls as a pure synonym of *Pseudocarsula* Kirby (1914). Willemse places it in the PYRGOMORPHINAE but it is clearly a Catantopine (**syn. n.**).

Measurements	♂ Nadghani Ghaut	♀ Dhimbam	♀ Naraikādu
Length of body	41·0	46·0	58·0
Length of antenna . . .	? (broken)	15·7	18·0
Width of head across eyes . .	2·4	2·9	3·5
Length of pronotum . . .	4·6	5·25	6·8
Length of tegmen	22·0	26·0	30·6
Width of tegmen at middle . .	*ca.* 2·3	3·0	*ca.* 3·75
Length of fore femur . . .	2·9	3·25	4·0
Length of hind femur . . .	13·5	15·0	19·25
Length of hind tibia . . .	11·5	13·8	17·5

Material examined. 1 ♂, Nadghani Ghaut, Gudalur District, 3000 feet, 21.ix.1938.; 1 ♀ Dhimbam, Biligirirangan Hills, 3630 feet (*Green*) 29.iv.1937; 1 ♀, Naraikādu, 2500–3000 feet, Tinnevelly Hills, 3–8.x.1938; 1 ♀, Mānshola (near Naraikādu), 3800 feet, 4.x.1938.

Bambusacris travancora sp. n.

♂. In all generic characters resembling the genotype, *B. greeni* Henry, 1933, but larger, differently coloured, with better developed tegmina, correlated with which the pronotum is more produced behind.

Head as in *B. greeni* but the semi-lunar sulcus at base of fastigium is better developed; face shallowly rugoso-punctate; a row of punctures along sides of head behind eye; shallow impresso-punctate areas on sides of dorsum; eyes slightly more prominent than in the genotype, dorsally separated by a space about equal to the width of basal antennal segment (in *B. greeni*, the interocular space is about equal to the width of the antennal flagellum); antenna, laid back, reaching beyond proximal third of hind femur; its flagellum slightly compressed, of nearly even width throughout.

Pronotum briefly truncate in front, rounded-produced behind; coarsely and irregularly punctured on prozona and lateral lobes, finely and more numerously punctured on metazona; a short median carina is present on the latter. Tegmina reaching to or beyond the margin of second tergite and better developed than in *B. greeni*, overlapping each other on the dorsum to some extent. Wings present, reaching to about the middle of second tergite. Prosternal tubercle and sternal plate similar to those of the genotype. Pleura coarsely punctured. Hind femur with its carinae more pronounced than in *B. greeni*; hind tibia with 9–10 outer, 11–12 inner spines (including apical ones in each case); hind tarsus with its third segment slender and much curved; with the arolium, about as long as the two proximal segments together. In other respects the limbs are similar to those of *B. greeni*.

Genitalia. Anal tergite with a pair of small, angular projections near the middle. Supra-anal plate triangular, with sides sinuated, medially sulcate throughout. Cerci nearly cylindrical, tapering, extending about as far as the supra-anal plate. Subgenital lamina conical, dorsally furrowed, extending about one cercus-length beyond the supra-anal plate.

Coloration. (In life) green; a blackish stripe from dorso-posterior portion of eye along side of occiput, extending across upper part of lateral lobe of pronotum, costal half of tegmen and along entire side of abdomen. Below this is a chrome-yellow stripe, faint and diffused on head, pronounced on lateral lobes and pleura. A pale mid-dorsal stripe extends from apex of fastigium to supra-anal plate—greyish-green on head and pronotum, greyish-white on inner portion of tegmina, and between them, and throughout the abdomen. Eyes greyish, with chocolate-brown oblique stripes. Antenna black except basal segment. Ventral surface of body greenish Prussian blue. Fore and mid femora yellow-green, their

tibiae and tarsi pale Prussian blue. Hind femur yellow-green with sanguineous knees; hind tibia Prussian blue, with a proximal spot of sanguineous followed by a black spot; spines concolorous, shading to black. Hind tarsus Prussian blue. These colours have faded and altered slightly in the dried specimens.

Measurements in mm.	Paratype ♂	Type ♂
Length of body	*ca.* 24·0	26·4
Length of antenna	15·0	15·0
Width of head across eyes . . .	2·7	2·7
Length of pronotum	3·3	3·4
Length of tegmen	5·0	5·4
Width of tegmen (unflattened) . .	1·5	1·5
Length of fore femur	3·3	3·3
Length of hind femur. . . .	11·0	11·3

Material examined. Type ♂ and paratype ♂, both from Thekkadi, Periyar Dam, Travancore, 2700 feet, 6–10.v.1937. Both were captured on the small bamboo *Ochlandra travancorica.* A few days prior to the capture of these specimens one was seen, but not captured, at Pirmed, also on *Ochlandra.* The ♀ has not been taken and the species appears to be rare, or perhaps local in distribution, as it was not found in other parts of Travancore in spite of special search which was made for it amongst its food-plant.

Siruvania gen. n. (fig. 11).

Belonging to the *Hieroglyphus* Krauss, 1877 group of genera. Size medium, much larger in ♀ than in ♂; micropterous in both sexes; coloration pale yellowish-green with black markings; somewhat polished.

Head large, conical, rounded dorsally, face rather reclinate in ♀, strongly so in ♂, convexly curved in profile; occiput curving evenly in front into fastigium which is rounded in front, transverse, discally concave in the manner shown in fig. 11, a and b; curving sharply but evenly into frontal ridge; frontal ridge deeply and widely sulcate in ♂, more shallowly in ♀, its lateral carinae pronounced, nearly straight, feebly diverging ventrally, extending nearly to clypeal suture. Lateral facial carinae well developed, running parallel with front margin of eye until nearly the middle of latter, then curving away from it and straightening out again to mandibular articulation. Antenna filiform, feebly flattened, flagellum of even width throughout; basal segment in profile extending little beyond frontal ridge in ♂, not reaching it in ♀; in ♀ the antenna is unusually slender. Eyes fairly large, flattened in ♀, less so in ♂; in side view, of the shape shown in fig. 11, f, in ♀, more rounded in front in ♂. Ocelli all developed but not pronounced. Mandibles rounded, with a strong lateral carina. Face and genae punctured, rest of head almost smooth.

Pronotum of different form in the sexes; in ♂ cylindrical with nearly parallel sides, dorsum straight in profile; front margin broadly rounded, hind margin shallowly marginate; median carina fine and low throughout; no lateral carinae; transverse sulci fine but distinct, at least the posterior cutting the median carina. In ♀, pronotum is widened distally, convexly curved dorsally in profile; median carina very low, especially in the middle; posterior transverse sulcus alone cutting it, the other two widely interrupted in the middle; shape of pronotum as shown in fig. 11, b, f.

Tegmina small and lateral, with venation much reduced, of the shape in both sexes shown in fig. 11, e. In the ♀, especially, clothed with numerous long, soft, upstanding setae. Metaepisternum very oblique, strongly carinate. Prosternal tubercle a slender, cylindrical, straight cone. Mesosternal lobes separated in both sexes by a space less than

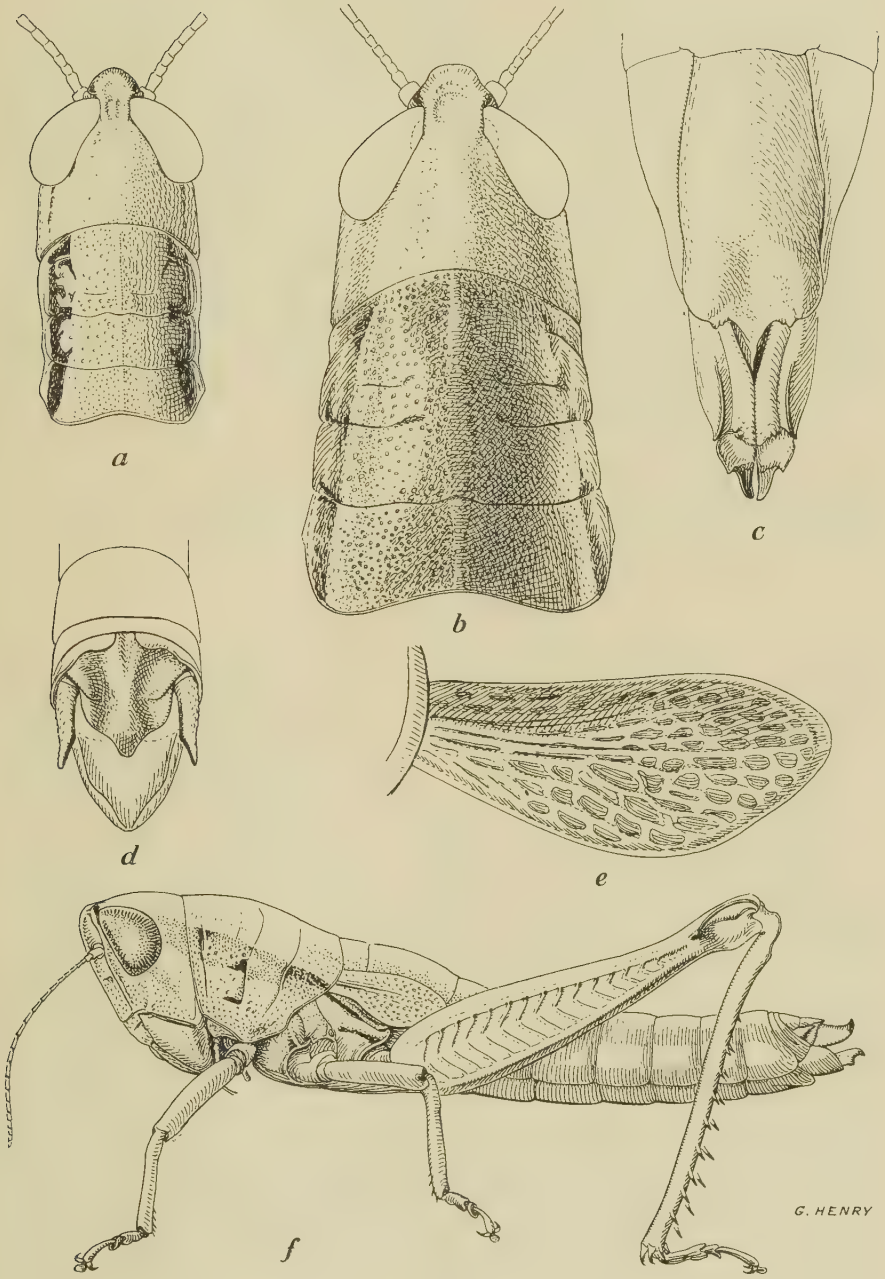

FIG. 11.—*Siruvania dimorpha* gen. et sp. n. (a) ♂, head and pronotum, dorsal; (b) ♀, head and pronotum, dorsal; (c) ♀, genitalia, ventral; (d) ♂, genitalia, dorsal; (e) ♂, left tegmen; (f) ♀, whole insect, lateral.

half their width, their inner angles obtusely curved; metasternal lobes contiguous in ♂, rather widely separated in ♀.

Fore and mid legs of normal size; fore and mid femora nearly cylindrical, their anterior genicular lobes broad and rounded, their posterior ones narrow and rounded; fore femur not carinate, mid femur feebly carinate antero-dorsally. Hind femur rather slender, with external face flattened, its knees not very large, lobes narrow and rounded, not spinose; carinae distinct but rather low, smooth, the dorsal one projecting distally in a minute tooth. Hind tibia stout, cylindrical, not carinate on the sides; bearing a number of spines on each side including an outer apical one. Hind tarsus of normal size, its basal segment about as long as the other two together, minus arolium. Arolia of all tarsi fairly large, nearly circular. Auditory tympanum well developed, open, covered by tegmina. Male supra-anal plate as in fig. 11, d; ♂ cercus tapering, nearly cylindrical, its inner side feebly angulate; ♂ subgenital lamina triangular, conical. Ovipositor with dorsal valves simple, their edges trenchant but not serrated; ventral valves toothed in the manner shown in fig. 11, c, f; ♀ subgenital lamina as figured; ventro-lateral tufts of setae on posterior ventrites present in ♂, absent in ♀.

Genotype. *Siruvania dimorpha* sp. n.

This genus appears to be most nearly related to *Parahieroglyphus* Carl, 1916, but differs from it in the less inflated ♀ head, narrower inter-ocular dorsal space, shape of pronotum, and the simple ♂ cerci.

Siruvania dimorpha sp. n. (fig. 11).

Fastigium of vertex with its discal concavity rather variable in form but tending to be more or less circular (♀) or longitudinally elliptical (♂), open behind, divided in the middle by a transverse crescentic sulcus, behind which there is a feeble median carinula. Inter-ocular dorsal space parallel-sided, transverse in ♀, slightly longer than wide in ♂. Head of ♂ in profile semi-elliptical, of ♀ as in fig. 11, f. Occiput finely punctured in two longitudinal bands; face, including median sulcus, lower part of genae, upper part of clypeus and outer aspect of mandibles, irregularly and rather finely punctured.

Pronotum with median carina cut by the posterior sulcus and sometimes, in the ♂, by the middle sulcus also. A submarginal anterior band and the metazona very finely and closely punctured, remainder with large shallow punctures. Thoracic pleura irregularly punctured; metanotum in both sexes, also first abdominal tergite in ♂, punctured like disk of pronotum. (The disk of first abdominal tergite in ♀ was noted at time of capture to be soft and poorly sclerotised, a feature which did not seem to be due to tenerality; in dried specimens this portion is somewhat contracted.)

Tegmina reaching about to the margin of first tergite. Wings vestigial or absent.

Hind tibia with about 9 outer, 8 inner spines (including apical ones), the two series not differing in size of spines.

Coloration. Rather variable, especially in ♀; light green, yellow-green or greenish ochraceous. The type ♂ is yellow, suffused on fastigium, abdomen and hind femora with pale reddish-brown, paler ventrally; flagellum of antenna pale reddish-brown; the following black marks are present: a line on sides of fastigium of vertex; a spot at mandibular articulation; a line on side of head behind eye; a broken, irregular band across upper part of lateral pronotal lobes and a short line below it on disk of lateral lobes; oblique marks on meso- and metaepisterna and epimera; streaks on base of tegmen; a pair of longitudinal fasciae on dorsum of metanotum and abdominal tergites, these becoming broken and browner distally; a small spot on upper part of anterior genicular lobe of mid femur; sides of hind knees above genicular lobes; a small spot on proximal ventral margin of latter; basal and sub-basal dorsal spots on hind tibia; a narrow line along ventral surface of the latter;

tips of hind tibial spines and spurs; inner aspect of cerci. The following markings are pale buff, more or less suffused with pink: ventral border of lateral lobes of pronotum; carinae of meso- and metaepisterna; a mid-dorsal band on metanotum and abdomen. Fore and mid legs yellow-green. Hind knees, except the black marks, and hind tibiae pale greenish-blue. Tegmina pinkish-buff, paling distally. Arolia of all tarsi dark brown with a large discal circular spot of buff.

Other males show a variable suffusion with dusky green, especially dorsally, and the black lateral fascia on head and pronotum is very strong and well defined. Females vary in ground-colour from greenish-yellow, and greenish ochraceous, to green and show great variation in the degree of development of markings. The lateral fascia on head and pronotum is brown, dusky green, or almost absent; with black spots here and there in its course. The dorsal abdominal fasciae of the ♂ are represented by variously developed buff and brown lines; hind femora self-coloured, tending to show a pale reddish suffusion dorsally and brighter red ventrally; dorsal part of pinnate carinae black in some; a black lateral spot on proximal part of hind knees; sides of latter, above the lobes, brown; rest of hind knees and hind tibiae as in ♂, but greener blue.

Vestiture. The ♂ is clothed almost everywhere with long, fine, colourless setae rather sparsely distributed; on the limbs there are, in addition, more numerous, shorter setae. In the ♀ the vestiture is similar in distribution and kind to that of the ♂ but relatively sparser and shorter except on the tegmina which bear an abundant pile of soft, long setae; tufts of ventro-lateral setae on the distal ventrites are present in ♂, absent in ♀.

Measurements in mm.	♂ Type	♂ Attakkatti	♀	♀
Length of body, *ca.*	21·0	19·0	34·0	35·0
Length of antenna, *ca.* . . .	10·0	?	9·5	11·0
Width of head across eyes. . .	3·75	3·5	5·1	5·1
Length of pronotum . . .	4·2	3·6	6·7	7·1
Greatest width of pronotum . .	3·7	3·2	6·1	7·0
Length of tegmen	3·6	3·4	5·8	6·0
Length of fore femur . . .	3·5	3·4	4·3	5·0
Length of hind femur . . .	11·7	11·0	15·3	18·0

Material examined. 1 ♂ from Attakkatti, Punachi (? South India) 15.xii.1917, (*T. Bainbrigge Fletcher*), in the British Museum collection; 1 ♂ from Nadungayam, 200 feet, (near Nilambur) Malabar, 16–22.ix.1938; ♂ (type), 2 other ♂♂ and 3 ♀♀ from Siruvāni, 1700 feet, Coimbatore District, 23 and 26.ix.1938; all except the first were collected by the third British Museum–Colombo Museum Expedition to South India in 1938. They were found, both at Nadungayam and Siruvāni, among low, mixed herbage on the outskirts of forest. In addition to the above, a number of specimens of both sexes from Siruvāni are in the Colombo Museum, and eventually half the material, including the type, will be in the British Museum and half in the Colombo Museum.

The species is evidently seasonal as it was not found at Siruvāni in April 1937, but was taken in abundance in September 1938 at the same spot.

Naraikadua gen. n. (figs. 12–13).

Size medium, build rather slender, limbs stout, coloration ornate. Antennae of 24 segments, long, very slender, filiform; flagellum cylindrical, of almost even width throughout. Fastigium of vertex declivent, strongly medially sulcate, its sides convergent anteriorly, meeting the frontal ridge in a rounded, very obtuse angle. Frontal ridge

projecting between the antennae, terminating just below the median ocellus, its sides nearly parallel; shallowly sulcate in the lower portion. Eyes large and globular but not very protuberant, their length about 0·8 of their height; dorsal inter-ocular space narrower than the frontal ridge. Face feebly reclinate, its carinae diverging below; a deep and broad sulcus below the eye.

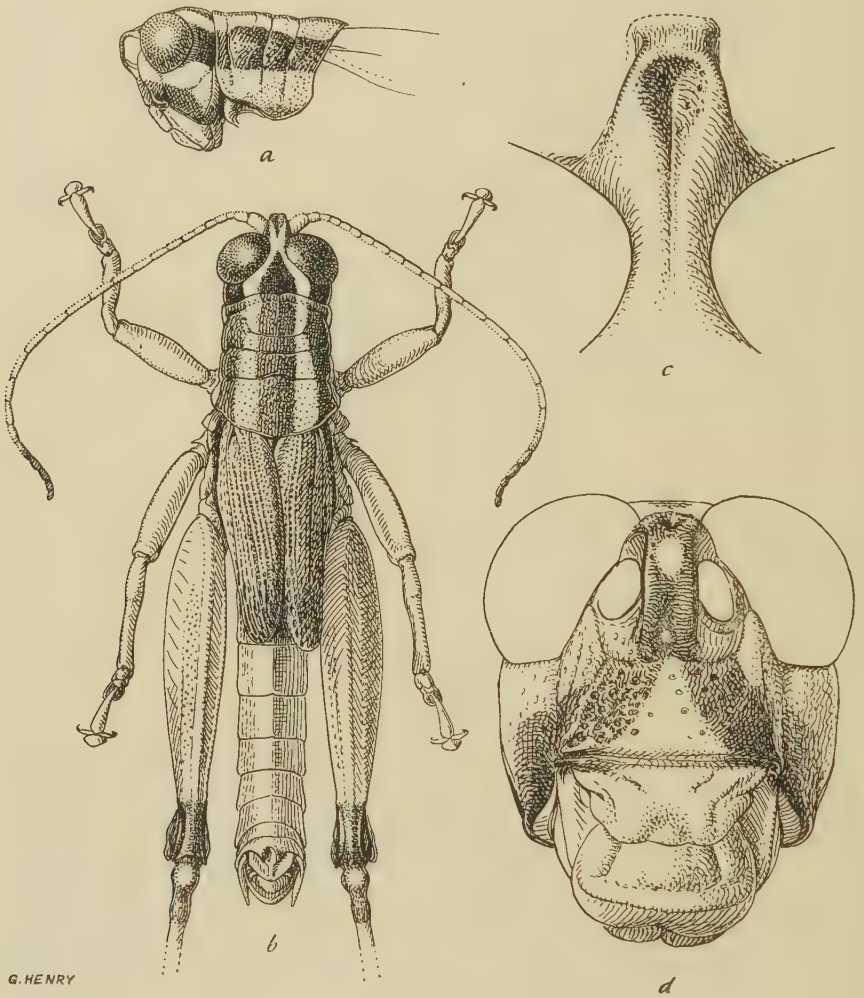

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Fig. 12.—*Naraikadua carmichaelae* gen. et sp. n. (a) ♂, head and pronotum, lateral; (b) ♂, whole insect, dorsal; (c) ♂, fastigium of vertex; (d) ♂, face.

Pronotum transversely rounded, without lateral carinae, median carina scarcely visible; three transverse sulci well developed, and a punctate transverse groove, very deep on the sides, just behind the front margin; general form of pronotum as shown in fig. 12, a, b.

Prosternal tubercle broadly tongue-shaped, as shown in fig. 13, a, b. Meso- and metasternal plate as in fig. 13, a.

Tegmina and wings abbreviated; the former broadest about the proximal third, thereafter tapering and rounded at apex. Venation consisting of numerous straight, almost parallel, thick veins separated by rows of large punctures; towards the tip the intervenular spaces become larger and more normal in character. Wings developed equally with the tegmina.

Limbs comparatively short and stout. Fore and mid femora nearly cylindrical, without carinae. Mid coxa with a small acute tooth on its antero-dorsal margin, homologous with the fore-coxal spine. Hind femora stout, their outer surface strongly rounded, their carinae not strongly developed.

Hind knee-lobes rounded, not spinose. Hind tibia of normal form, shorter than the hind femur, with very few spines on the outer dorsal carina; without an outer dorsal apical spine. Hind tarsi long, their two proximal segments rather stout, the distal segment slender, and with its arolium nearly as long as the other two together.

Male genitalia as in fig. 13, c. Female unknown.

Genotype. *Naraikadua carmichaelae* sp. n. described below.

This genus is nearest to *Coloracris* Willemse, 1938 from Malaya; it differs in the shape of prosternal tubercle and in the long hind tarsi. It shows affinity also with *Utanacris* Miller, 1934, also from Malaya, in the facies, general structure of fastigium, limbs etc. but differs in having shorter antennae, larger and not concave pronotum, and in the prosternal tubercle. It resembles in some degree the South American genus *Anniceris* Stål.

Naraikadua carmichaelae sp. n.[4] (figs. 12–13).

♂. Antennae, laid back, extending to about the proximal fourth of hind femur. Face coarsely and irregularly, but not closely punctured, the punctures less numerous above the clypeus, none on upper part of genae below eyes. Occiput nearly smooth except for a band of fine punctures in the shape of an inverted V; fastigium finely punctured, its median sulcus very fine between the eyes, widening anteriorly and terminating in front in a transverse curve (fig. 12, c). Pronotum in front feebly emarginate in the middle; hind margin broadly and somewhat sinuously rounded, feebly produced in the middle into a very obtuse, rounded angle. A feeble trace of a median carina on prozona and metazona, none between the three transverse sulci. The submarginal groove is deep on the sides, shallow and punctate in the middle. Lateral lobes as shown in fig. 12, a, with a rather deep concavity on the disk above the anterior angle and a larger one above the ventral angle; somewhat gibbous on pro- and mesozonae above these concavities; surface irregularly punctured on the dorsal disk and on the lower part of lateral lobes, closely punctured throughout the metazona. Tegmina with a rather wide, semi-transparent border all round their margins; with numerous sub-parallel, thick, longitudinal veins connected by numerous cross-veins giving the effect of rows of large punctures; in the apical half of the costal field and third of the rest the cross-veins become less numerous and the longitudinal veins diverge, giving these parts of the tegmen a semi-hyaline appearance. The wings extend nearly as far as the closed tegmina. Meso- and metapleurae finely and rather irregularly punctured. Fore and mid femora almost smooth. Hind femur with the middle dorsal carina very feebly serrated, the dorsal field punctured, the outer ventral field with large, shallow punctures; elsewhere smooth except for the pinnate carinae, which are strongly developed. Hind genicular lobes rounded,

[4] Named in honour of Miss Amy Wilson Carmichael, doyenne of the Dohnavur Fellowship, a band of devoted missionaries who were my kind hosts and collaborators while the expeditions were collecting at Dohnavur and Naraikādu. Without their enthusiastic assistance many of the most interesting specimens taken would not have been obtained and I take this opportunity of expressing my grateful thanks to Miss Carmichael and her colleagues for their boundless hospitality.

median dorsal carina produced apically into a very small tooth. Hind tibia with 3–5 strong spines on the outer, dorsal carina, 8 on the inner. Hind tarsus about 0·6 the length of the hind tibia, its second segment about 0·75 the length of the metatarsus, the third segment, with its arolium, about 0·85 the length of the first two together.

Genitalia as figured; cerci compressed at base and slightly twisted, thereafter cylindrical to the blunt, rounded apex; they project slightly beyond the subgenital lamina which is transverse, broadly rounded-conical.

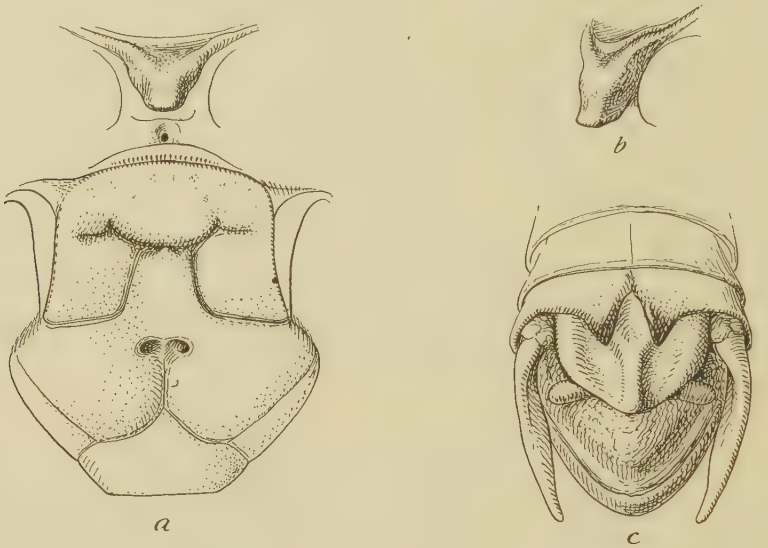

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Fig. 13.—*Naraikadua carmichaelae* gen. et sp. n. (a) ♂, sternum; (b) ♂, prosternal tubercle, latero-ventral view; (c) ♂, genitalia.

The face, dorsum of head and pronotum, femora, tibiae and tarsi are clothed with fine colourless setae, abundant and long on hind tarsi and sides of hind tibiae, sparse elsewhere; double tufts of setae are present on the posterior ventrites.

Coloration. This description is drawn up from notes made when the insect was alive;

Measurements in mm.	♂
Length of body	24·0
Length of antenna, *ca.*	15·0
Width of head across eyes	4·4
Length of pronotum	4·8
Length of tegmen	7·5
Length of fore femur	4·1
Length of hind femur. . . .	12·75
Length of hind tibia	11·0
Length of hind tarsus. . . .	6·6

it has retained its colour comparatively well. Eyes dark purplish-brown, nearly black (they have changed now to a deep mahogany). Antennae chrome yellow, dark brown at tips. Head and pronotum rich spectrum yellow with bands and markings (as shown in the accompanying figures) Prussian-blue-black. Tegmina dark crimson, shading to dark

brown or fuscous at tips and on the semi-transparent margins. Wings dark but their colour cannot be seen in the unique type. Meso- and meta-pleura dirty yellowish-white, black dorsally. Abdomen yellow on sides, with a broad dorsal, macular band of pinkish-brown; ventrites suffused pale blue-grey. Cerci yellow with dark green tips. Sternum pale green with brownish and bluish median suffusion. Fore and mid legs bright green. Hind femora bright green, yellow before the knees which are dark Prussian blue dorsally, black on upper part of sides, Prussian blue on genicular lobes. Hind tibiae dark Prussian blue at base, with a yellow dorsal spot at extreme base; a yellow sub-basal annulus; thereafter blue-green for the remainder; the tibial spines are concolorous at base, black in their distal halves. Hind tarsi crimson, their claws green at base, black at tip.

Material examined. The unique type in the British Museum (N.H.) is a ♂ captured by me while on the third of the British Museum-Colombo Museum Expeditions to South India, at Naraikādu, 2500 feet, on 7.x.1938. It was found on a steep, forested hill-side at the elevation of 2500 feet. At the time heavy storms of wind and rain had littered the ground with green leaves torn from the branches above and it seems probable that the species may normally inhabit the upper foliage of forest trees.

Palniacris gen. n. (fig. 14).

Facies similar to *Sedulia* Stål, but probably more nearly related to *Gerenia* Stål. Coloration mottled brown. Micropterous.

Head slightly porrect but less so in ♂ than in *Sedulia*. Occiput rounded-convex. Fastigium of vertex declivent, transversely furrowed, laterally bounded by carinae and with small foveoles more or less developed; much wider in ♀ than in ♂; curving evenly into frontal ridge. Frontal ridge convex between antennae, straight below median ocellus, its sides sinuated, carinae low and irregular below ocellus. Face and genae as in *Sedulia*; frontal ridge, face and genae coarsely rugoso-punctate. Mandibles laterally strongly bi-carinate. Eyes in ♂ large, elliptical, rather prominent; in ♀ smaller, somewhat reniform, not prominent. Antennae filiform, somewhat compressed. Pronotum feebly rounded-tectate, with strong median carina of uneven development in different parts; carina cut by three transverse sulci of which the posterior is well behind the middle. Lateral carinae represented by a rounded ridge, below which the surface of lateral lobes descends vertically. Front margin of pronotum broadly rounded, feebly emarginate in the middle; hind margin rounded-truncate, deeply emarginate in the middle. Shape of lateral lobes as in *Sedulia*, their surface above the ventral margin more or less concave. Pronotum coarsely rugoso-punctate, with or without a shiny smooth area on lateral lobes. Tegmina lateral, not reaching margin of second tergite, broadest behind the middle, with or without shiny black spots. Tergites strongly carinate, coarsely and shallowly punctured. Pro-sternal tubercle conical. Sternal plate similar, in both sexes, to that of *Sedulia*. Limbs similar to those of *Sedulia*. Fore and mid femora carinate; hind femur with dorsal carina sparsely serrate, terminating distally in a small tooth; all genicular lobes rounded; hind tibia lacking an outer apical spine.

Male genitalia with no distinctive specialisation, cerci conical, compressed; subgenital lamina short, rounded-conical, somewhat compressed.

Genotype. *Palniacris maculatus* sp. n. described below. The genus also contains the Acridian named *Bibracte rugulosa* by I. Bolivar (1902 : 620) from Kodaikanal, Palni Hills, South India. This insect, of which specimens are before me, has no close relationship with *Bibracte* Stål, from which it differs strongly in facies, type of sculpture, fastigial and pronotal characters and the much stronger microptery, with tegmina quite lateral.

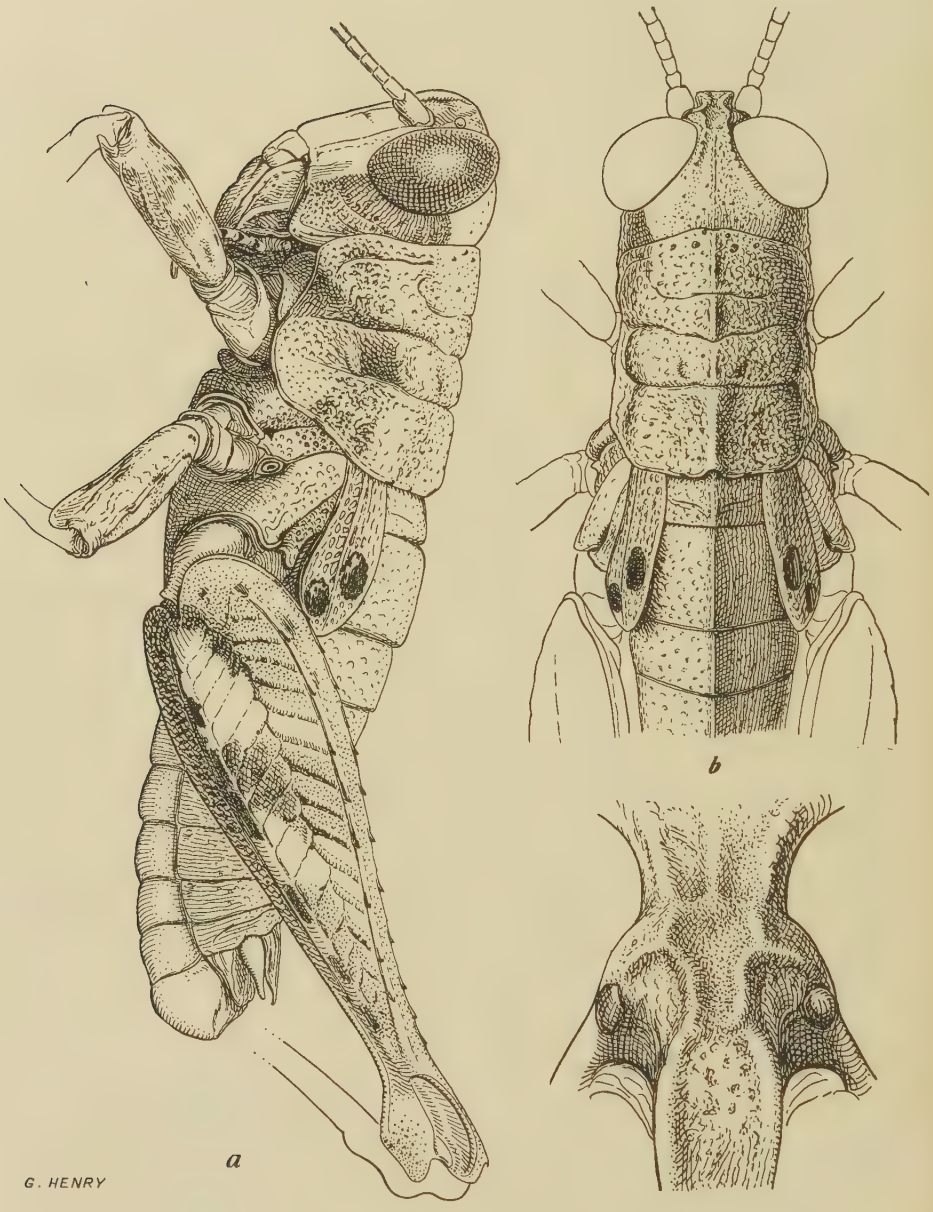

Fig. 14.—*Palniacris maculatus* gen. et sp. n. (a) ♂, whole insect, lateral; (b) ♂, front part of body, dorsal; (c) ♂, fastigium of vertex, antero-dorsal view.

Palniacris maculatus sp. n. (fig. 14).

♂. Occiput feebly carinate; its sides, behind the fastigium, with low carinae parallel with dorsal margins of eyes; sides of occiput with shallow impressed furrows diverging behind. Interocular space equal to about 1·6 width of proximal antennal segment. Fastigium of vertex shown in fig. 14, c. Frontal ridge slightly expanded between antennae, its surface feebly concave, strongly punctured. Face and lower part of genae coarsely punctured. External surface of mandibles, between the strong carinae, concave, rugoso-punctate. Antennae, laid back, reaching about to the margin of first tergite; very slightly thickened distally. Pronotum with rounded ridge representing lateral carina well developed only between two posterior sulci; unlike *P. rugulosa* (I. Bolivar), the upper part of lateral lobes is not smooth and polished; surface of pronotum uneven, almost everywhere coarsely rugoso-punctate, with small, scattered, black tubercles. Tegmina not reaching middle of second tergite, lanceolate, acutely rounded at tip, costal margin somewhat lobately expanded in distal half; with two black, polished spots on disk, arranged as shown in fig. 14, a, b. Metanotum and first tergite coarsely and irregularly punctured, remaining tergites more shallowly punctured. Meso- and metapleura coarsely and irregularly punctured. Hind tibiae with 7–8 outer, 10 inner, strong spines.

Genitalia. Anal tergite with a pair of small rounded, marginal lobes. Supra-anal plate triangular, shallowly sulcate medially at base, sides at base thickened. Cerci conical, compressed. Subgenital lamina rounded below, somewhat compressed.

Coloration. Ground-colour brownish ochraceous, mottled and marbled with darker brown; face in front of the sub-ocular carinae pale, behind it dark brown up to a point about half-way up the hind margin of eye; dorsum of head above this point pale, mottled with brown and with scattered black specks; pronotum with traces of a pale broken band above lateral carinae and another on lower part of lateral lobes; middle of upper part of disk of latter dark brown; tegmina ochraceous with dark brown areoles, the costal margin narrowly shiny black; two deep black, polished spots on disk as illustrated; abdomen mottled dark brown anteriorly, shading to ochraceous distally, with a mottled lateral line and broken oblique marblings on each tergite; meso- and metaepisterna each with a pale longitudinal band, rest of pleura mottled dark brown; fore and mid legs self-coloured, irregularly mottled with brown; hind femur mottled brown, with scattered black specks and two pale, oblique transverse bands above the outer ventral carina, as figured; ventral area sanguineous; hind tibiae proximally ochraceous, distally sanguineous, the middle portion more or less suffused with brown. Hind tarsi dull ochraceous red.

Measurements in mm.	Type ♂	Paratype ♂
Length of body	21·0	*ca.* 19·0
Width of head across eyes . . .	4·75	4·4
Length of pronotum	5·5	5·2
Length of tegmen	3·4	3·3
Length of fore femur	4·6	4·25
Length of hind femur. . . .	15·0	13·0

Material examined. Type ♂ and another ♂ from Top Slip Camp, Anaimallai Hills, S. India, 26.iv.1937; a ♂ in the British Museum from Sidapur, Coorg, 3000 feet, 12.iv.1917. The ♀ is not known. The Top Slip Camp specimens were taken among undergrowth in rain forest.

Palniacris rugulosus (I. Bolivar).

Bibracte rugulosa Bolivar, I., 1902, *Ann. Soc. ent. France* **70** : 620.
—— Kirby, W., 1910, *Syn. Cat. Orthopt.* **3** : 467.
—— Uvarov, B., 1929, *Rev. suisse Zool.* **36** : 562.

As pointed out by Uvarov (*loc. cit.*) this species is not a *Bibracte*. The ♀ only was described by Bolivar; the ♂ is considerably smaller than the ♀ and also than the ♂ of *P. maculatus*, above described. It differs from the latter also in the following features :—

Occipital carina scarcely developed; interocular space relatively wider; surface of fastigium flatter; foveoles closed below by a carina; frontal carinae obsolescent in lower half of face; antennae, laid back, reaching little beyond margin of metanotum; pronotum scarcely tectate on metazona; lateral lobes with a large, polished brown patch on the upper part; a pale yellow, callous patch, best developed in front, on the lower part; tegmina with inner margin straight, apex more bluntly rounded; lacking polished black spots; abdomen with a broad black lateral band; hind femur with a dark brown polished patch at external base, continued along outer ventral carina and expanded into a broken, oblique fascia before the middle of femur; the area enclosed by this dark marking is pale buff; interno-ventral area of hind femur and hind tibia bright sanguineous; hind tibial spine-formula, 7 outer, 9 inner.

In addition to the ♂♂, 2 ♀♀ of this species are before me and enable me to offer the following details supplementary to Bolivar's description.

Interocular space about 2·2 width of proximal antennal segment; eyes much less projecting than in the ♂ (in the latter, the greatest width of head is across eyes, in the ♀ it is across the middle of face, well below eyes); antenna, laid back, scarcely reaching base of tegmen. The coloration of one of the females before me is darker and more uniform than in the males, though the same markings are discernible; the other ♀ is teneral and is light greenish testaceous without distinct markings.

Measurements in mm.	♂	♀
Length of body	15·5	23·0
Width of head across eyes . . .	3·4	4·4
Length of pronotum	4·0	5·8
Length of tegmen	2·9	4·9
Length of fore femur	3·4	4·5
Length of hind femur. . . .	10·0	14·0

Material examined. One ♂ in British Museum labelled Pulney Hills, 3000–6000 feet, 10–31.v.(?)27(*P. S. Nathan*); 1 ♀ in British Museum from Shambaganur, Madura (District); 1 ♂, 1 ♀ from Kodaikanal, 7000 feet, 31.iii.1936 (found in tangled herbage on the edge of jungle), collected by the first British Museum–Colombo Museum Expedition to S. India. The specimens may all be regarded as topotypes, as Bolivar's specimen was from Kodaikanal, in the Palni Hills; Shambaganur is, in a straight line, only a mile or two from Kodaikanal although considerably lower.

Coniocara gen. n. (figs. 15–16).

Size medium; form slender and compact, somewhat fusiform; coloration green, varied with red and blue.

Antennae of 25 segments (possibly more, as the unique specimen has several false

joints in its only complete antenna) long, slender; second basal segment very narrow at base, swollen distally; flagellum nearly cylindrical and of almost even width throughout. Head conical, face very reclinate for a Catantopine, its shape and sculpture as in fig. 15, a, b, c. Eyes widely separated dorsally, not at all prominent, oval in shape. Median ocellus distinct, lateral ocelli very small. Fastigium of vertex not declivent; its fore part narrow with sub-parallel sides, deeply sulcate, laterally carinate; its hinder part broadening into a transverse shape as shown in fig. 15, b, occiput straight in profile.

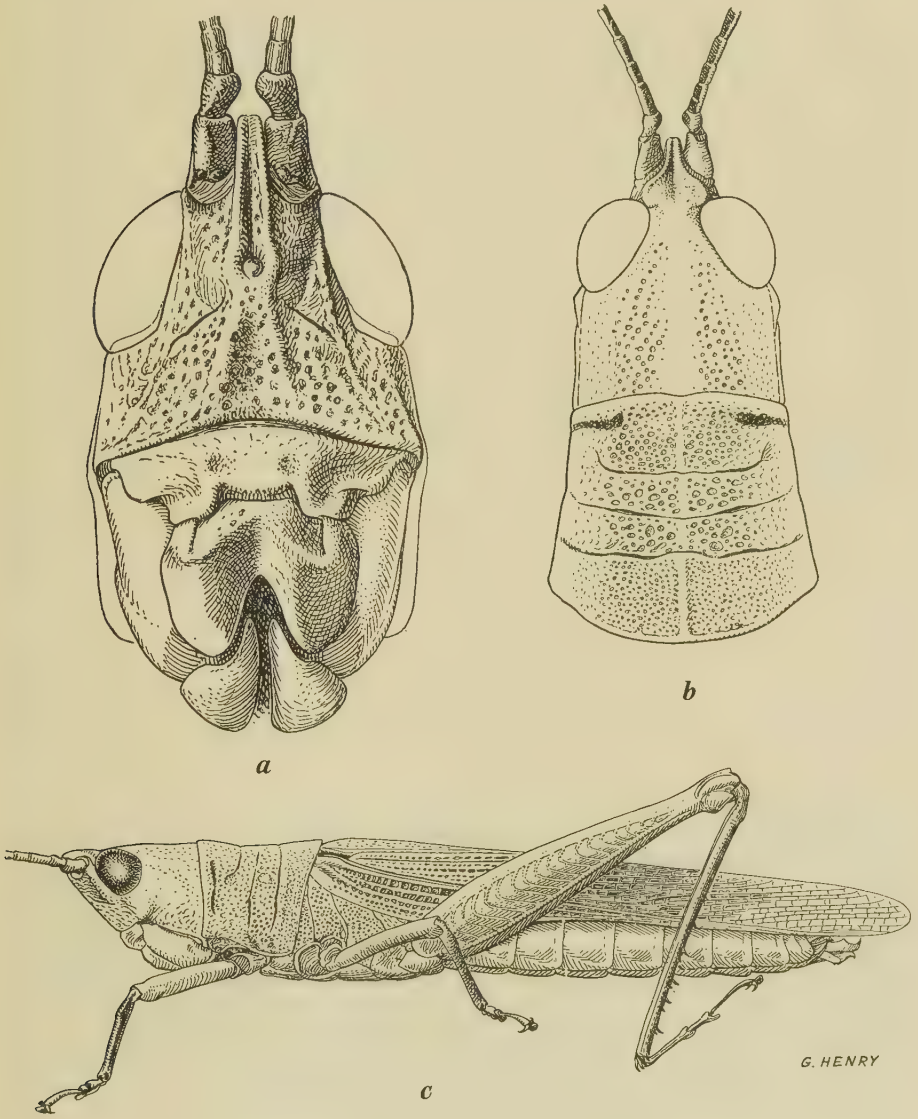

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Fig. 15.—*Coniocara rubropicta* gen. et sp. n. (a) ♀, face; (b) ♀, head and pronotum, dorsal; (c) ♀, whole insect, lateral.

Frontal ridge narrow, its margins feebly diverging to the median ocellus, then more strongly so, becoming obsolete before the clypeal suture; deeply sulcate from the apex to median ocellus (this sulcus in front not confluent with the fastigial sulcus), thereafter shallowy punctato-sulcate. Lateral facial carinae feebly developed, strongly diverging ventralwards, subobsolete below. Clypeus and labrum of the shape and sculpture shown in fig. 15, a. Labium with the paraglossae very long and pointed, strongly recurved over the mandibles as shown in the same figure. Face coarsely punctured, dorsum of head more finely punctured.

Pronotum semi-cylindrical, without lateral carinae and very feeble median carina; front margin feebly emarginate, hind margin broadly rounded; with three well-marked but fine transverse sulci, all of which cut the median carina; in addition there is a well-marked submarginal sulcus at the sides. Lateral lobes deep and vertical, their front margin nearly straight, front angle nearly a right angle, lower margin concave in front, convex behind, hind angle feebly obtuse, hind margin nearly straight, humeral bay scarcely developed. Surface of pronotum with coarse honeycomb punctures almost all over, the punctures on metazona closer and finer than elsewhere. Tegmina long, straight and very narrow, broadest near the base, thence tapering evenly to the tip which is finely rounded; the main veins tend to run in straight, sub-parallel lines; areoles in the basal portion in the form of rows of large punctures, distally more normal in type. Wings much shorter than the tegmina, narrow, their costal field projecting in a narrowly rounded apex, vannal veins few in number.

Prosternal tubercle transversely elliptical, its ventral surface flat, irregularly puckered. Meso- and metasternal plate almost flat, of the shape figured (fig. 16, a). Pleura strongly punctured. Tympanum well developed; partly covered by the postero-dorsal rim. Legs rather short and slender; fore and mid femora nearly cylindrical, not carinate, their genicular lobes rounded, the anterior ones large, the posterior ones small and narrow; fore and mid tibiae rather weak, their corresponding tarsi of normal form. Hind femur not stout, its carinae low, its genicular lobes narrow, rounded. Hind tibiae of normal form with few outer dorsal spines but these including an apical one; hind tarsi long and slender. All arolia well developed.

Male unknown. Female cerci rod-like; ovipositor with the upper valves deeply concave dorsally in the basal half, still more deeply concave in the distal half, the two concavities separated by a sharp ridge; the tips strongly recurved, very sharp; lower valves decurved and also very sharp, slightly shorter than the upper ones; on their ventral surface, about the middle, each is tumid and bears several sharp teeth (fig. 16, b).

Genotype. *Coniocara rubropicta* sp. n.

This genus belongs to a forest-dwelling type of the Catantopinae and appears to be related, though not at all nearly, to *Verdulia* I. Bolivar, a Malayan genus, which it resembles in the reclinate face, structure of hind legs etc., it differs from *Verdulia* in the fastigium, fore and mid legs and other details. It shows interesting resemblances to the Seychellean genus *Enoplotettix* I. Bolivar, 1912 in facies, antennal characters, structure of mouth-parts, pro-, meso- and metasterna and general structure of limbs, but differs from it in the shape of fastigium, eyes, pronotum, tegmina and wings, sculpture, ovipositor and in the presence of an outer apical spine on hind tibia. I am indebted to Dr. Uvarov for drawing my attention to these relationships.

Coniocara rubropicta sp. n. (figs. 15–16).

♀. Antenna longer than the hind femur by about five of the terminal segments. Eyes as figured. Fastigium of vertex in its basal, transverse portion feebly and unevenly concave. Dorsum of head with irregular, shallow punctures. Face (fig. 15, a) coarsely

and closely punctured, swollen on each side above the mandibular articulation; lower part of genae coarsely rugoso-punctate. Pronotum punctured everywhere except two small spots on upper disk of lateral lobes; the punctures in the submarginal groove irregular, those between this and the posterior transverse sulcus large, circular and flat-bottomed, those on the metazona much smaller and closer; on the lower part of lateral lobes the punctures run together, producing irregular rugae; there are several small, deep concavities near the lower margin of lateral lobes. Thoracic pleura punctured in similar manner to the mesozona of pronotum.

General character of tegmina and their venation as shown in fig. 15, b; wings with the costal field narrow and projecting distally; anal field narrow, with seven main vannal veins and few cross-veins.

Hind femur with the outer dorsal area punctured, elsewhere almost smooth; hind tibia with 5 outer dorsal spines (including the apical one) and 8 inner; hind tarsus half as long as the hind tibia, its metatarsus about 0·8 of the distal segment (with arolium), its second segment about 0·6 of the metatarsus.

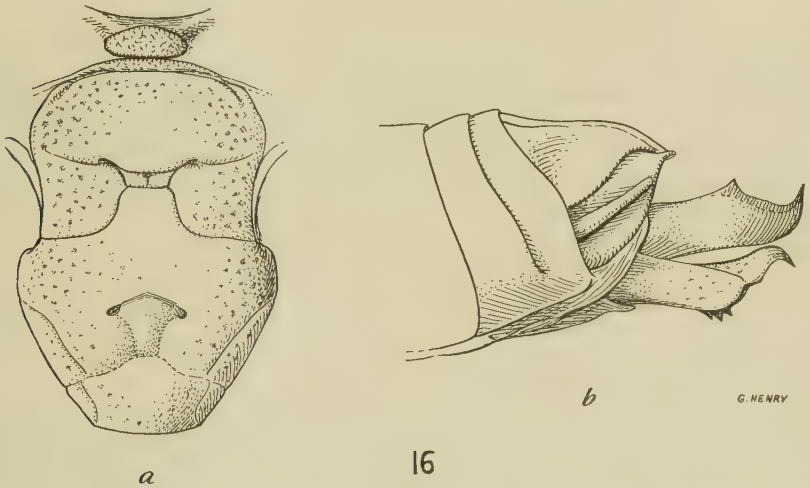

Fig. 16.—*Coniocara rubropicta* gen. et sp. n. (a) ♀, sternum; (b) ♀, genitalia.

Genitalia. Female supra-anal plate about an equilateral triangle (it is somewhat shrivelled in the unique type but appears to be shallowly medially sulcate in the basal half). Cerci straight, cylindrical, feebly tapering rods, not extending beyond the supra-anal plate. Ovipositor as figured.

Coloration. In life green, now ochraceous green. Antennae black, whitish tip, the outer side and distal margin of segments in the basal half brownish-red; transverse sulci on pronotum dense black; the following markings are bright red: basal part of veins *Sc* and *R* in tegmina; fore and mid femoral apices and bases of their tibiae; hind genicular lobes and dorsal apical margin of hind femora, with extreme dorsal base of hind tibiae; about the distal third of hind tibiae; two proximal hind tarsal segments and arolium of the third. Fore and mid tibiae suffused dark greenish-grey with small black spots at their distal apices; their tarsi similar, with a black lateral line on proximal two segments. Hind tibiae dark blue in the proximal two-thirds, their spines and distal spurs darker blue; third segment of hind tarsi, except arolium, blue. Proximo-ventral portion of hind genicular lobes black. Tegmina with veins self-coloured yellowish-green, intervenular spaces pale bluish hyaline; a black linear mark on the inner side of the red basal spot on

Sc and *R*, and a fine black line in the intervenular spaces on each side of vein *M* near the base. Wings with veins and cross-veins greyish-blue, the membrane bluish-hyaline at base, suffused pale brownish-hyaline distally.

Measurements in mm.	♀
Length of body	35·4
Length of antenna	19·5
Width of head across eyes . . .	4·5
Length of pronotum	5·8
Greatest width of pronotum . .	6·2
Length of tegmen	27·5
Width of tegmen near base, *ca.* . .	4·3
Length of wing	23·5
Width of wing	9·5
Length of fore femur	4·75
Length of hind femur. . . .	16·6
Length of hind tibia	13·8
Length of hind tarsus. . . .	6·5

Material examined. The unique type ♀ was captured by me in forest at Naraikādu, 2500 feet, in the hills of the Tinnevelly District of South India on 5.x.1938. Much search was made in the neighbourhood for further specimens without success. As strong winds, with heavy rain, had been prevailing for some time, littering the ground with leaves from the trees above, it seems probable that the species may be a tree-top-living form, although the specimen was actually taken on the ground.

Mopla gen. n.[5] (figs. 17–18).

♀. Size medium; form rather stout, slightly wider than high; brachypterous (possibly also macropterous); coloration brown or dark red, with bold bands and round blotches of pale yellow on body and hind femora.

Head with occiput rounded, sloping between eyes into the fastigium of vertex; the latter somewhat tumid, broadly triangular, transversely rounded, not medially sulcate or carinate, but with a feeble median dimple at base between eyes; in front rounding evenly into the frontal ridge which is narrow, parallel sided, projecting semicircularly between antennal scrobes, below which it becomes obsolete; face rather reclinate, roundly concave in side view, transversely rounded, with lateral carinae almost obsolete. Antennae of 21–22 segments, the basal one shorter than frontal ridge; second also short; flagellum, long, thick, of even width, elliptical in section at base, flattened distally. Eyes large, prominent, broadly oval, separated dorsally by a space about as wide as the first antennal segment. Median and lateral ocelli quite obsolete. Mandibles longitudinally bicarinate at sides. Maxillary palp with terminal segment broadly elliptical, compressed. Labial palp short and stout. Face and clypeus coarsely punctured, occiput more finely punctured.

Pronotum transversely rounded, with median carina scarcely visible, lateral carinae absent; sides gradually widening posteriorly until the metazona, then strongly widened; front margin broadly rounded, hind margin rounded obtuse-angled; lateral lobes nearly vertical in pro- and meso-zonae, sloping on metazona; their fore margin roundly sloping, fore angle obtuse, ventral margin obtuse-angled in the middle, hind angle nearly a right-angle, hind margin shallowly concave, humeral bay not developed; disk of lateral lobes rather strongly concave; posterior transverse sulcus well developed, crossing dorsum of

[5] Moplas, a Moslem tribe inhabiting the Malabar region of South India.

pronotum well behind the middle; other transverse sulci present only on the sides. Surface of pronotum coarsely rugoso-punctate.

Tegmina and wings abbreviated but not lateral; the former, when folded, tending to form two planes, a dorsal and a lateral, meeting in an obtuse angle at vein *M*, which is straight and extends to the apex of tegmen; costal field strongly lobate in the basal half, thereafter roundly tapering to the apex; inner (anal) margin evenly rounded, tip rounded; micro-venation in form of a close reticulum giving the appearance of puncturation.

Meso- and metapleura coarsely punctured. Prosternum a transverse, somewhat tumid, band, its tubercle a cylindrical cone. Sternal plate much broader than long, of the shape shown in fig. 17, d.

Fore and mid legs stout; their femora nearly cylindrical, not carinate, punctured; anterior genicular lobes large and rounded, posterior narrow and obtuse; fore and mid tibiae rounded, feebly compressed, punctured. Hind femur stout, thick, strongly rounded, the carinae all serrated; coarsely punctured everywhere but the inner face; the pinnate sulci marked by rows of strong punctures; knees large, their dorsal margin medially toothed, their lobes compressed, acutely pointed but not spinose, with convex dorsal margin and concave ventral. Hind tibia stout, slightly shorter than the femur, both dorsal carinae armed with stout, somewhat compressed spines, of which the inner are very slightly longer than the outer; an outer apical spine is present. Hind tarsus more than half the length of hind tibia, its third segment, with arolium, about as long as the two proximal segments together. All tarsi of normal form, their arolia well developed.

Abdomen rather short, conical, compressed; auditory tympanum well developed, quite open; female supra-anal plate with a deep ⅄-shaped suture, dividing it into paired basal portions and a terminal, semi-elliptical portion; ♀ cerci short, stout at base, tapering to an acute point; ovipositor with the valves armed with a marginal and a submarginal row of fine, acute, more or less recurved teeth, arranged as shown in fig. 18, a, b.

Head, body and limbs clothed almost everywhere with long soft, colourless setae; tegmina bare except for a row of setae along the course of vein *M*.

Genotype. *Mopla guttata* sp. n. described below. The male is unknown.

Dr. Uvarov, who has kindly examined this insect, pronounces it to be a remarkable form with no known relatives in the Old World. In some of its characters, and notably in the structure of head, and in the peculiar bold spotting and banding of the body and hind femora, it seems to show a faint affinity to the neotropical group Tropinoti. The discovery of the male might help to solve the mystery of its relationships.

Mopla guttata sp. n. (figs. 17–18).

Frontal ridge considerably narrower than basal antennal segment, smooth in its upper part, irregularly punctured below with no median sulcus. Fastigium of vertex finely and irregularly punctured. Occiput more coarsely punctured. Face, upper part of clypeus, and genae, very coarsely punctured. The puncturation of the head is less pronounced on the pale bands, detailed below, than elsewhere.

Pronotum very coarsely rugoso-punctate, its hind margin obtuse-angulate as shown in fig. 17, b. Tegmina distinctly demarcated, especially distally, at vein *M*, into two flat planes—dorsal and lateral; their inner margins overlap except for a very small triangle at the base. Hind tibia armed with 10–11 inner and 8–9 outer dorsal spines (including an apical one).

Coloration. General ground-colour of head, body, tegmina and limbs olivaceous brown (the olive element was noted to be more pronounced at the time of capture than it is in the preserved specimen), with the following pale ochreous yellow markings: a median line, narrow in front, gradually expanding posteriorly, from front of fastigium to hind

margin of pronotum; a fascia on the side of head and pronotum, expanding posteriorly, commencing at lateral base of antenna, passing below eye, across genae and across lateral lobe of pronotum; a large oval spot on metepisternum; a pair of large spots on metasternal lobes; a large spot on the side of abdominal tergites 6 and 7; two pairs of circular spots on hind femur arranged as shown in fig. 17, a, and a somewhat indefinite band at

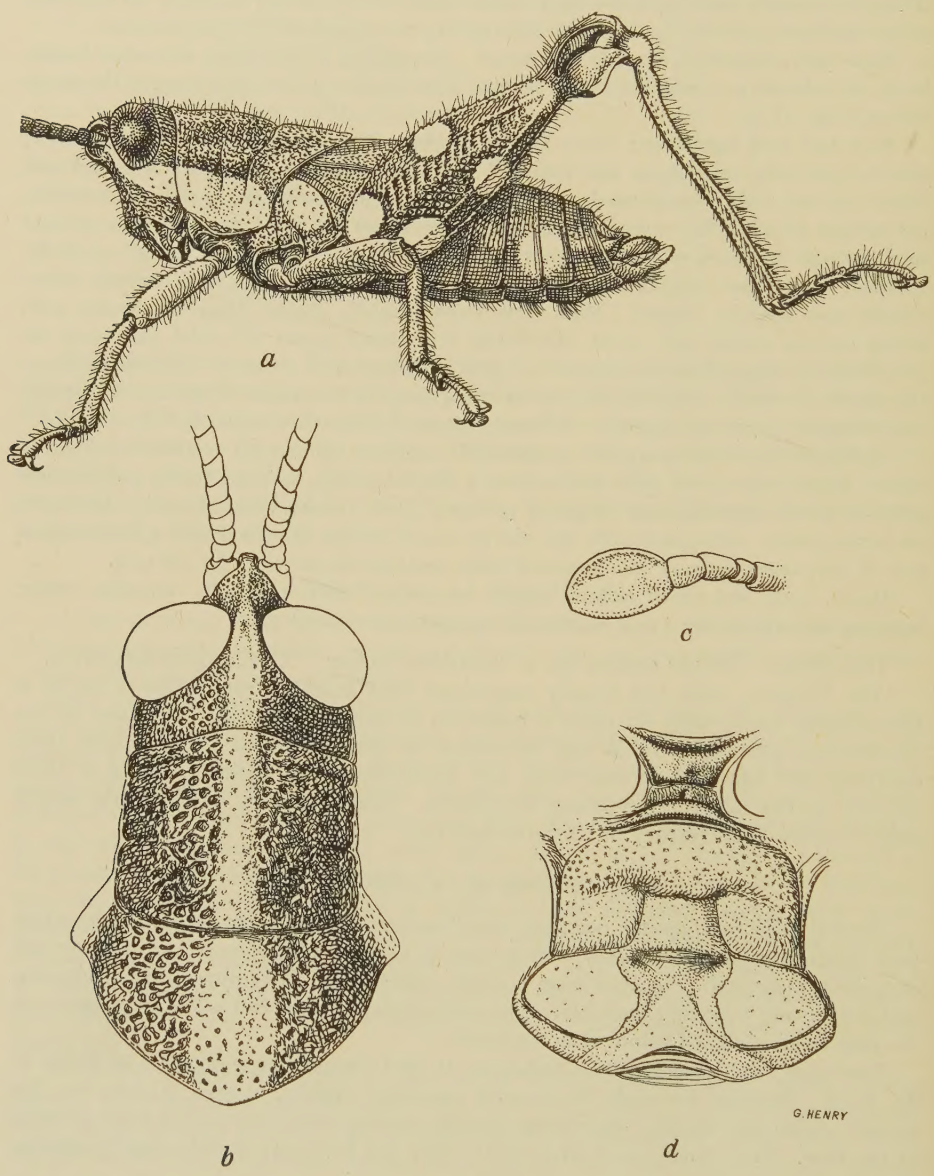

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Fig. 17.—*Mopla guttata* gen. et sp. n. (a) ♀, whole insect, lateral; (b) ♀, head and pronotum, dorsal; (c) ♀, left maxillary palp; (d) ♀, sternum.

the constriction before the hind knee; these pale markings tend to be surrounded by a dark band. Antennae self-coloured at base, rapidly darkening to black on the flagellum, of which the tip is ochreous. Terminal segment of maxillary palp pale cream. Hind

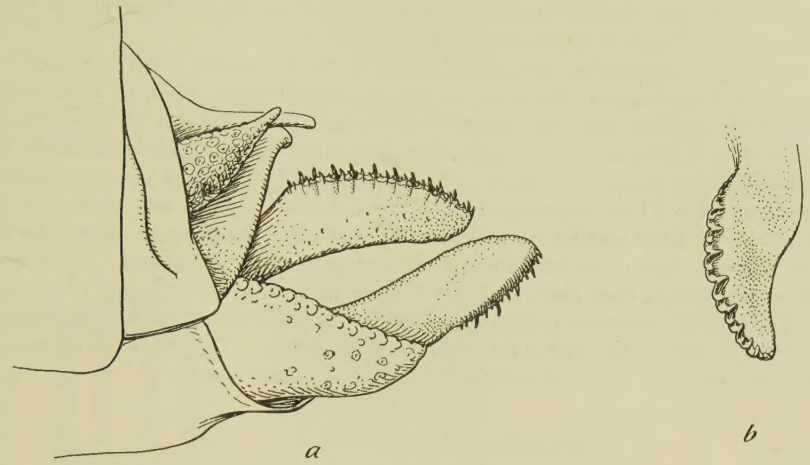

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FIG. 18.—*Mopla guttata* gen. et sp. n. (a) ♀, genitalia (setae omitted); (b) left dorsal valve of ovipositor seen from above.

knees pale ochreous brown dorsally, very pale on distal margin; upper part of sides very dark brown; lobes pale ochreous brown with a dark brown proximo-ventral spot. Hind tibia self-coloured, pale at base and with a trace of a sub-basal ochreous annulus; shading to dark brown ventro-distally. Tegmina plain olive-brown with darker margin.

Measurements in mm.	♀
Length of body	20·0 (probably 23·0 in life)
Length of antenna	13·0
Width of head, across eyes . .	4·5
Length of pronotum . . .	7·0
Greatest width of pronotum . .	6·25
Length of tegmen	9·0
Length of fore femur . . .	4·2
Length of hind femur . . .	12·3

Material examined. The unique type, a ♀, was captured by me in rain-forest at Top Slip Camp, a forest depot in the Anaimallai Hills, South India, on 26.iv.1937.

Mopla rubra sp. n.

Very near to *M. guttata*, of which it will probably eventually be regarded as a subspecies; it differs from the latter, however, in so many minor points that I feel the only satisfactory course is to treat it as a full species.

Smaller than *M. guttata*, with relatively shorter antennae; shorter and less well-developed tegmina, which are much more widely separated at their bases and are not so

distinctly divided into two planes at vein *M*; frontal ridge feebly constricted opposite antennal scrobes; below this point, irregularly sulc ɔ to a point half-way to the clypeal suture; fastigium of vertex more evenly declivent, less tumescent than in *M. guttata*; puncturation of face, occiput, pronotum and pleurae less coarse than in the latter; pronotum with the angle of posterior margin rounded.

Coloration. Ground-colour olivaceous brown as in *M. guttata*, with the same pale ochreous bands and spots; fastigium of vertex, frontal ridge, front of face, clypeus mandibles, fore and mid legs, pale greenish ochraceous. The following parts are strongly suffused with rich, dark crimson. Sides of occiput, a band across face from ventral base of antenna running below the lateral ochreous band and occupying the lower part of genae; almost the whole pronotum except the ochreous bands; fore coxa; thoracic pleura except the large spot on met-episternum; and entire hind femur except the knee and the ochreous spots. Antennae and maxillary palpi as in *M. guttata*. Hind knees, dorsally and laterally, deep black except the dorsal margin and distal part of genicular lobes, which are pale greenish ochraceous. Hind tibia pale ochraceous proximo-dorsally, thence as in *M. guttata* but with a trace of crimson suffusion. Tegmina olive-brown with a dark brown suffusion on costal margin beyond the proximal lobe.

Measurements in mm.	♀
Length of body, *ca.*	20·0
Length of antenna	11·0
Width of head across eyes . . .	4·1
Length of pronotum	6·0
Greatest width of pronotum . .	5·3
Length of tegmen	6·4
Length of fore femur	3·7
Length of hind femur. . . .	10·3

Material examined. The unique type ♀ was captured in forest at Nadungayam, 200 feet, near Nilambur, Malabar, South India, 16–22.ix.1938.